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TOTAL FORCE OF THE FUTURE
the future is NOW!

An Assessment Study
of the "fit" of Coproduction Theory
to the
United States Air Force's
Total Force Policy

by

Mark D. Nickerson

Lieutenant Colonel
United States Air Force Reserve

As an Advanced Research Project

A paper submitted to the director of the Advanced Research Department in the Center for Naval Warfare Studies in partial satisfaction of the requirements for Master of Arts Degree in National Security and Strategic Studies.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College, the Department of the Navy, or the Department of the Air Force.

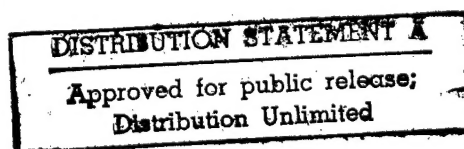
Signature: Mark D. Nickerson

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Paper directed by
John B. Hattendorf, D. Phil.
Director, Advanced Research Department

Captain Michael J. Filkins
Naval War College

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EXECUTIVE SUMMARY:

A One Page Synopsis

The theory of coproduction lends itself to being used by the military in its quest to "size and shape" its forces and to ensure that its forces are seamlessly integrated. Coproduction theory involves an organization's use of volunteers in cooperation with its day-to-day workers to accomplish the organization's objectives.

The United States is undergoing tremendous change. Budgets are being slashed. The Federal Deficit has been targeted for reduction. Long standing active duty military forces are being looked at with a wary eye and senior leaders are making references to America's history as a militia nation.

Without unlimited funds to conduct business as usual and with world events in the geo-political environment conspiring to allow for military down-sizing, it is important that the forces the United States has in place, at any given time, be the best possible for the least cost.

The bottom line of this research is the development of a better logic -- the logic of coproduction theory -- for policy makers to use their experience and judgment in designing, justifying, and implementing the Total Force Policy. It proposes to use the untapped potential of the Reserve Component to provide for better National Defense for least cost.

The research is broken down into three sections. The first section links coproduction theory to today's Total Force Policy within the National Security Strategy environment. The second section demonstrates the application of coproduction concepts to "sizing and shaping" the Total Force. The final section assesses the "fit" of coproduction theory to the United States Air Force's implementation of the Total Force Policy.

This research shows that there is a "fit" of coproduction concepts to the United States Air Force, with its use of the Reserve Component. Unknowingly, the Air Force has effectively implemented these coproduction concepts in its day-to-day operations. This provides the policy maker and the senior military leader with the unique opportunity of taking the "lessons learned" from the Air Force to apply them to all the other Services.

By using the systematic "logic" of coproduction theory, it is possible to break a Total Force policy problem (such as "sizing and shaping") into its basic component parts to assess the best utility and combination of people for the desired outcome. However, if coproduction theory does no more than help decision makers think "outside the box" of conventional paradigms, it is a useful tool. It has the potential to help explore innovative and different institutional structures; as well as different mixes of relationships between the participants, as well as the processes of the work performed. The possibilities are endless.

*E*xecutive *S*ummary

Implications and Introduction

Implications And Introduction

COPRODUCTION IMPLICATIONS ON THE TOTAL FORCE POLICY

The bottom line of this research is that the social science concept of coproduction is applicable to the implementation of the Total Force. It provides a "logic" for policy makers to use along with their experience and judgment in implementing the Total Force Policy. Specifically, it may be used as a tool to size and shape the Total Force of the 21st Century. The implications are enormous for the restructured military of the post Cold War era.

The first implication is that coproduction may "do more with less" in the coprovision of National Defense. The emphasis is on coprovision where each member of the Total Force team brings special capabilities and cost efficiencies to the National Defense equation. The "fiscal-budget-based" application of coproduction concepts may provide policy makers with better mixes of active, reserve, civil servant, and civilian contractors to provide greater capability at the same cost. This is important. It is estimated that the downturn in defense spending has stabilized at approximately 250 billion dollars for the foreseeable future. Today, the political reality is that the DoD budget is spread too thin trying to provide for the competing interests of force modernization, Operations Other Than War (OOTW), and forces structured to fight two Major Theatre Wars (2 MTWs). Utilization of coproduction tools may provide the best resource allocation rationale for individual services to budget for the National Defense in this time of scarce fiscal resources.

"Doing more with less" deals with outcomes. The idea is to obtain the full use of the Total Force team members' efforts in the form of the outcome of National Defense. It deals with maximizing capability for a fixed budget. Just as importantly, coproduction concepts may also be used to tap the potential of each of the team member's participation "to get there from here." Coproduction may be part

of a management philosophy to obtain the full utilization of and between team members in the process of producing the work necessary for National Defense. As part of the process of managing human assets, the institutional coproduction process may enhance the day-to-day effectiveness of the relationships between the team members. The idea is to accomplish the mission through the full scope of capabilities, which only a team may provide, while getting the most out of the taxpayer's dollar.

The current geopolitical environment dictates that the U.S. have military forces in place to deter wars, and failing that, to fight and win wars. Forces are also required for Operations Other Than War. These include such things as humanitarian relief, nation-building, military-to-military programs, domestic and international terrorism, civil disorder, oil spills, information warfare and drug interdiction. The Active Component, as the repository of "warfighting skills," may not want to diversify into some of these more esoteric areas and may want to rely on other members of the team for those core competencies. For instance, Reservists, Civil Servants, and Government Contractors are uniquely suited for many of these seemingly unorthodox operations as they bring with them specialized abilities and experiences from the civilian sector. Coproduction theory speaks directly to this sort of "resourcing" beyond the obvious "corporate mission," or in this case, the military mission. It is another example of "getting from here to there" with the best capability, often for the least price.

The second major implication is that coproduction concepts may serve as the linking pin between military strategies, domestic preferences, and economic viability. Faced with a projected cap on defense spending of approximately 250 billion dollars from now into the 21st Century, the Policy Makers must "morph" the military into the proper size and shape to meet uncertain threats and risks in the geopolitical environment. The budget is not negotiable. However, the strategy and mission may change to meet the budgetary constraints. Today, the CINC-directed "warfighting" responsibilities to fight 2 MTWs and carry out multiple OOTW are a requirement. The service chiefs are responsible for organizing, training, and equipping forces, while at the same time trying to fund equipment modernization. Coproduction concepts may provide the link between the warfighting CINCs' responsibilities and the service chiefs'

responsibilities to fulfill the requirements of a specific strategy, or part of a specific strategy for the least risk.

With so many constraints, a Coproduction Framework provides an excellent tool for policy makers to use in their quest to effectively size and shape the Total Force--including the "roles and missions" between other services. For instance, with Coproduction theory, Active Component and Reserve Component mission-sharing responsibilities may be explored and mission capability may be improved. The same approach may be applied across service lines to compare and contrast the mission-sharing responsibilities of different services in the joint arena. This may make it possible to match different service capabilities with projected operational and organizational needs to meet a specific strategy. Best mix scenarios may be allocated resources to ensure the execution of the national strategy with the greatest capability for the least cost.

The third implication is that these observations are just the tip of the iceberg for implementing the concepts of coproduction to improve organizational development, create better management, and foster seamless integration between the participants. If coproduction theory does no more than help decision makers think "outside the box" of conventional paradigms, it is a useful tool. It has the potential to help explore innovative and different institutional structures; as well as different mixes of relationships between the participants, as well as the processes of the work performed. The possibilities are endless.

Possibly, in no other area may coproduction be more important than its emphasis on the "citizen" participating with a government agency to produce services or goods for society. The ramifications for society may be significant. Participation may serve to heighten citizen awareness of the society which surrounds them. As such, the presence of citizen-participants may temper the excesses of government action while their involvement strengthens the bonds of democratic government. An additional important observation is the role the citizen-soldier plays in the makeup of the Total Force. There is probably no other single factor that influences public opinion, regarding the military, as much as the citizen-soldier or civilian-contractor. As neighbor, churchgoer, taxpayer and community participant, the citizen-soldier and citizen-contractor bring the harsh realities of national defense into a softer light by being the next door

neighbor who helps accomplish just such aims. It is the citizen-soldier who brings the "mission" home and educates the people around him or her about the role of the military in a democratic society. In a sense, they are "ambassadors of good will" who bring the will of the people to the military and the larger political process, and, the message of the military and the government to the people.

In summary, Coproduction Theory may help tap the potential of the Total Force. It provides a tool with which to maximize the efficiency and effectiveness of U.S. military forces now and into the future.

COPRODUCTION IMPLICATIONS FOR THE USAF

In reality, the Air Force is successfully using the concepts of coproduction (albeit, unknowingly) with its interpretation of the Total Force Policy. The research shows a "fit" between the concepts of coproduction and how the Air Force does business. The research shows a "healthy" use of coproduction concepts in the Active and Reserve Component relationship. The implications of this discovery have broad possibilities for the future implementation of the Total Force Policy. The first implication is that the Air Force may do its work better if it institutionalizes the concepts of coproduction within its own "sets of rules." The second implication is that the Air Force experience may provide a model of how to employ coproduction concepts, which may be adopted by other Services within DoD to improve their implementation of the Total Force Policy.

The USAF Institutional Coproduction Process suggests that either a harmonious or adversarial relationship may develop between the dominant bureaucracy of the Active Component, and the Reserve Component. The relationship has largely been harmonious because of the USAF's use of coproduction concepts. Demonstrated RC performance, common values and beliefs, with Active Component leadership commitment combined with Reserve Component autonomy, provides the harmony in their relationship, which mitigates the possibility of overtly opportunistic behavior by either component. The research suggests ten coproduction interactions that may contribute to the good "health" of this relationship:

- The Reserve Component exists "to serve" the USAF.
- The Active Component takes "ownership" for Reserve activities.
- The Reserve Component becomes a "stakeholder" in mission success.
- There is "one rule book" for both the Active and Reserve Components.
- The USAF leadership provides the input of "necessary resources" to the RC.
- The USAF provides the input of "realistic" missions to the RC.
- The USAF culture provides the input of "caring" to the RC.
- The RC provides the output of increased mission "effectiveness" for the USAF.
- The RC provides the output of increased "balance" for the USAF.
- The RC provides the output of increased "quality of work life" for the USAF.

According to institutional coproduction process theory, the best way to ingrain coproduction concepts is to integrate them in the formal "sets of rules" around which an institution organizes itself. A logical step for the USAF may be the formal incorporation of these coproduction concepts into the USAF institutional process. The implication would be to structure the "sets of rules" for reserve participation to make the process faster, better, more consistent and more reliable, where the USAF may continually improve itself to size and shape the Air Force to meet the National Security requirements of today and the future.

The second implication is that if coproduction concepts work for the Air Force, the same coproduction concepts should also work for the other DoD services, namely the Army and the Navy. Extrapolating coproduction concepts from the Air Force to the Army and Navy should not be difficult given the nature of all the services underneath the DoD umbrella. What must occur in order for such effective change to take place is that Army and Navy decision makers must start thinking outside the box of their traditional institutional boundaries and become accustomed to operating from a new institutional coproduction process perspective. Total Force Policy may be redefined using coproduction concepts as a common language. This would help de-politicize the process and help the Army and Navy to better relate their management and resource allocation systems to better utilize their reserve components. It may provide the "logic" to guide the Army and Navy to exact a more efficient mix from their Active and Reserve Components to better meet the requirements of the National Security environment.

INTRODUCTION TO THE RESEARCH

BACKGROUND

The Report of the Commission on Roles and Missions of the Armed Forces (CORM) states:

Congress asked us to examine Reserve Component roles and missions in DoD's future Total Force. Our recommendation is to size and shape Reserve Components more consistently with national strategy needs, integrate the Reserve Forces better with the Active Duty Forces, improve training and education, and eliminate reserves not needed.¹

The JCS Reserve Component Study Working Group identifies three major issues in order to accomplish the CORM recommendation where issue number 2053/0-47 states "the Total Force should be sized and shaped to meet military requirements of the National Security."² Issue number 2056/0-50 states "the Services should ensure that individuals and units of the RC are fully incorporated into all relevant operational plans and actually used in the execution of those plans."³ Issue number 2057/0-51 states "greater integration and cooperation is required between Active and Reserve Components. Seamless integration is the key to effective Reserve support of the Total Force."⁴ To better understand these issues, J-8, Forces Planning Branch put out a call for research in its *Research Project Data Sheets* asking for research on the topics of "Seamless Integration Between Active and Reserve Components" and "Sizing and Shaping the Total Force."

THE PURPOSE OF THE RESEARCH

Two research questions are quoted from J-8, Forces Planning Branch, *Research Project Data Sheets*:

1. "Sizing and Shaping the Total Force" research question: "How can the Total Force be sized and shaped to meet the military requirements of the National Security Strategy?"⁵
2. "Seamless Integration Between Active and Reserve Components" research question: "What are the requirements for seamless integration of Reserve Component (RC) forces with Active Component (AC) forces?"⁶

Both of these research questions examine many of the same elements of the Total Force. It makes sense to examine both of them simultaneously to better understand the interactions between seamless

integration and the sizing and shaping of the Total Force. However, time and resource constraints limit the examination to one topic at a time. This research will investigate the topic of sizing and shaping of the Total Force. It will also provide the foundation for a companion study on seamless integration which may be studied in the near future.

Science Applications International Corporation (SAIC), at the request of the JCS, has examined the sizing and shaping research question. SAIC's narrow scope of the topic uses a "fiscal-budget-based" approach. Appendix C on the *Air force Sizing and Shaping Process* is presented verbatim in Section One of this research. While it is useful in providing the DoD and JCS institutional view of the topic, this is only the beginning of the investigation. As SAIC notes in the conclusion to the executive summary of their report:

Currently, the Services are sizing and shaping their forces effectively within the overall Department of Defense guidance. However, additional focus and overall guidance may be required as the active component/reserve component integration process is redefined.

The Total Force Policy is not adequately defined or understood; nor does it provide sufficient guidance to the Service's force structuring community.⁷

The purpose of this research is to propose that coproduction theory may provide a more adequate definition and a better understanding of the Total Force Policy. Coproduction theory may provide better guidance to the Service's force structuring community. Coproduction concepts may be used to assist the policy maker in the sizing and shaping of the Total Force to meet the military requirements of the National Security Strategy.

THE THREE SECTIONS OF THE RESEARCH

The research is presented in three sections:

Section One is the *Total Force Policy within the National Security Strategic Environment*.

Section One sets the boundaries and environment for the research. It begins with a brief historical perspective of the evolution of the Total Force Policy. It proceeds with a review of the National Security Strategic environment by employing the Richmond Lloyd "top down" strategy and force planning framework. The Bartlett Model is used to link the two major tenets of Total Force Policy; seamless integration, and, sizing and shaping the Total Force, to the National Security Strategic framework. The United States Air Force is highlighted as an example of Total Force Policy implementation. A conceptual model is developed which links the Air Force's strategic vision of *Global Engagement* with the two Total Force objectives of (1) seamless integration between AF Active and Reserve Components; and, (2) sizing and shaping the Air Force's Total Force, through the means of coproduction concepts.

Section One continues with a "fiscal-budget-based" approach where the pivotal issue for Total Force Policy is the budget which drives the size and shape of the Total Force. Completing the Lloyd strategic and force planning framework, DoD's Planning, Programming, Budgeting System (PPBS) is presented as the focal point in the resource allocation process. This is shown as the DoD and the JCS perspective on sizing and shaping the Total Force to meet the military requirements of the National Security Strategy. In parallel, SAIC, under contract from the JCS, conducted a "fiscal-budget-based" study: Sizing and Shaping the DoD Total Force. Because the USAF is used as an example of Total Force implementation, SAIC's Annex C, *Air Force Sizing and Shaping Process*, is presented in its entirety.

The elements of Section One compose the backdrop upon which coproduction theory will be examined. While many of the linkages, frameworks, models, and approaches may be criticized for lacking empirical rigor, these elements will not be empirically tested. For the scope of this research these elements

will assume to be "givens" in the environment so that the main issue of this research may be assessed -- the efficacy of coproduction concepts to the Total Force Policy.

Section Two is the *Application of Coproduction Concepts to "Sizing and Shaping" the Total Force.*

Section Two seeks to use the social science concept of coproduction to provide a "logic" for assessing the Total Force Policy, the Active and Reserve Component mix in the Total Force, and, potentially, a rationale for the future sizing and shaping of the Total Force based on the greatest productivity for the least cost. It uses a three "building block" approach to establish the efficacy of coproduction as a potential policy-making tool for senior leaders in the development and implementation of the Total Force Policy.

The first building block is a redefined concept of coproduction that is useful to describe the active and reserve component coproduction relationship. It is defined as the "critical mix" of coproduction attributes to establish the active and reserve component relationship which is the "voluntary" and "active" participation of reserve members in the performance of "hard" inputs to make a "positive" and "direct" contribution to the production and delivery of the service outcome.

The second building block is the development of a Comparative Coproduction Framework that is useful as a potential analytical tool to empirically study force mixes between active and reserve components. It examines four types of production: *ancillary coproduction*, *parallel coproduction*, *joint coproduction*, and *independent production*, matrixed against attributes of reserve participation activity of the individual reservist, unit, and reservist in direct cooperation with the active duty. The outcomes of this framework could then be compared and contrasted with the active duty force structure to evaluate different mixes between active and reserve components.

The third building block is the development of a USAF Institutional Coproduction Process based on economic theory to optimize force mixes, which also includes the use of "sets of rules" to justify, design, implement, and change the bureaucratic process to become more coproductive. It basically shows a politically driven resource allocation process where the USAF is the dominant bureaucracy in the

process responsible for formulating the "sets of rules" to efficiently allocate resources to its coproducing reserve component in the production of the commodity of National Defense.

Section Three examines *Assessing the "fit" of Coproduction Theory to the USAF.*

Section Three seeks to accomplish this assessment by placing the Total Force Policy in its "real world" context of the complex political interactions between decision makers at the Pentagon and in Washington, D.C. The purpose of the assessment is to observe the policy maker's perception of the Air Force's Total Force Policy. "Given" the environment of National Security Strategy decision making which has been developed from Section One and using the three building blocks of coproduction concepts from Section Two; (1) a redefined concept of coproduction, (2) the Comparative Coproduction Framework, and (3) the USAF Institutional Coproduction Process, the background is set to assess the efficacy of coproduction as a policy making tool to size and shape the USAF's Total Force.

Anecdotal evidence from open-ended interviews of Total Force Decision Makers shows a healthy use of coproduction concepts in the Air Force's implementation of the Total Force Policy. The outcome of the assessment is that the judgment and experience of the Policy Makers endorses the existence of coproduction concepts as an important way the Air Force's Total Force does its work. The assessment demonstrates the "fit" of coproduction theory to the USAF's Active and Reserve Component relationship. The primary purpose of this research is substantiated -- coproduction theory may provide a more adequate definition and a better understanding of the Total Force Policy.

The research prompts the next step -- a "call for action" for more study using coproduction concepts to size and shape the Total Force to meet the military requirements of the National Security Strategy. The need exists to develop a systematic structure to apply the Air Force's "lessons learned" to the DoD Total Force Policy. Follow-on research should examine the application of coproduction concepts to Total Force Policy with two distinct but interrelated levels of research: the observational-empirical level and the conceptual-theoretical level of investigation.

Observational-empirical level: Another purpose of this assessment is to propose a more systematic and logical approach using coproduction concepts to determine the most effective mix of Active and Reserve Components in the Air Force's force structure. Using normative coproduction concepts and rudimentary coproduction economic theory, a simple Comparative Coproduction Framework is developed. It is used with a simple illustration to demonstrate the potential of this approach to more effectively shape the USAF's force structure. This just introduced the idea of using coproduction theory to size and shape military forces. Much work with empirical studies, pilot projects, analytical models, etc., needs to occur to further this idea into meaningful tools for the force planner to use to structure forces. More study needs to occur at the observational-empirical level of research before coproduction may provide for the second purpose of this research — Coproduction theory may provide better guidance to the Service's force structuring community.

Conceptual-theoretical level: The last purpose of this assessment is to propose that decision makers utilize coproduction concepts in the design, justification, and implementation of Total Force Policy. Normative approaches from Section One of the Research suggests the use of a "top down" conceptual model to link the National Security Strategy through the two tenets of Total Force Policy: Seamless integration, and, sizing and shaping the Total Force, with coproduction concepts. The "fiscal-budget-based" approach to resource allocation is observed to be the dominant DoD institutional approach to sizing and shaping the Total Force. Section Two evolves these two ideas into the USAF Institutional Coproduction Process where the Air Force's provision of National Defense is the sum of the production outputs of both the Active and Reserve Components. Ultimately, the USAF Institutional Coproduction Process is essentially a politically driven process between internal and external institutions and actors. Many of these linkages are tenuous, and require better conceptualization. Of special note is the Total Force Policy tenet of seamless integration which should be studied as a companion topic to this research. More research needs to occur before the conceptual-theoretical level of coproduction may provide for the last purpose of this research — Coproduction concepts may be used to assist the policy maker in the sizing and shaping of the Total Force to meet the military requirements of the National Security Strategy.

Notes

1. U.S. Government Printing Office, Directions for Defense: Report of the Commission on Roles and Missions of the Armed Forces (Washington DC: 24 May 1995), ES-5.
2. Joint Chiefs of Staff, Reserve Component Study Working Group: Draft Working Papers (Washington DC: 23 August 1995). 10.
3. Ibid.
4. Ibid.
5. Joint Chiefs of Staff, Research Project Data Sheet: Sizing and Shaping the Total Force (Washington DC: 9 August 1995) .
6. Joint Chiefs of Staff., Research Project Data Sheet: Seamless Integration Between Active and Reserve Components (Washington DC: 9 August 1995).
7. Sizing and Shaping the Total Force, Science Applications International Corporation, (Washington DC: 23 July 1996), I-1.

Section

One

Total Force Policy within the National Security Strategy Environment

Total Force Policy within the National Security Strategy Environment

PROLOGUE

In the future, reservists will play a larger role and America must remember the actual and potential sacrifices reservists make to serve the nation. The American people must be ready to support their reservists, their families and their employers in the greater role they will all play in America's defense.

Secretary of Defense William Perry, 1995 Annual Report¹

*TO SERVE . . . the men and women of the Air Force Reserve and Air National Guard have sworn an oath to serve the Constitution of the United States and the American people. The organizations of the Air Force Reserve and the Air National Guard exist to serve the United States Air Force. The Department of Defense's Total Force Policy is the enunciated strategy for the integration of the Air Force Reserve and Air National Guard within the United States Air Force where **The Air Force should be organized to make full, effective, and coordinated use of its total force.**²*

THE QUESTION

How is the Total Force sized and shaped to meet the military requirements of the National Security Strategy?³

EVOLUTION OF THE TOTAL FORCE POLICY

Defense planning will now emphasize the need to plan for optimum use of all military and related resources available to meet the requirements of Free World Security. These Free World military and related sources - which we call the 'Total Force' - include both active and reserve components of the U.S., those of our allies; and the additional military capabilities of our allies and friends.

Secretary of Defense Melvin Laird in 1970 and repeated remarks to celebrate Total Force's 25th Anniversary, December, 1995⁴

The evolution of the Total Force Policy began in 1970 out of a need to "reduce expenditures"⁵ with the rationale "that in many instances the lower peacetime sustaining costs of the reserve force to similar active units, can result in a larger total force for a given budget or the same size force for a lesser budget."⁶ Secretary of Defense Melvin Laird issued a memorandum that conceptualized "reductions in overall strengths and capabilities of the active forces, and increased reliance on the combat and combat support units of the Guard and Reserves;"⁷ where "emphasis will be given to concurrent consideration of the total forces, active and reserve, to determine the most advantageous mix to support national strategy and meet the threat."⁸ Codified as formal DoD policy in 1973, Secretary of Defense Schlesinger stated, "Total Force is no longer a 'concept'; it is now the Total Force Policy which integrates the Active, Reserve and Guard forces into a homogenous whole;"⁹ where "reserve forces would be the initial and primary augmentation of active forces and military response would involve the integrated use of all forces available including active, reserve, civilian, and allied (forces)."¹⁰

TENETS OF THE TOTAL FORCE POLICY

Goal No. 1: I want to maximize the National Guard and Reserve contribution to the total force - not only in war, but also in peace. . . .

Goal No. 2: I want to continue to promote the mission readiness of the Guard and Reserves to support the National Security Strategy. . . .

Deborah R. Lee, Assistant Secretary of Defense for Reserve Affairs, remarks to the National Security Subcommittee, House Appropriations Committee, March 14, 1995¹¹

The two tenets of Total Force Policy, (1) reserve forces as the primary augmentation of active forces and (2) integrated use of all forces available including active, reserve, civilian and allied in determining force structure, are presently areas of concern for decision makers.¹² Responding to Congressional inquiry in 1995 the DoD Commission on Roles and Missions of the Armed Forces identifies the need "to size and shape Reserve Components more consistently with national strategy needs, integrate the Reserve Forces better with the Active Duty Forces, improve training and evaluation, and eliminate reserves not needed."¹³ The Joint Chiefs of Staff (JCS) reframe this recommendation into areas

for investigation where two JCS Research Project Data Topics are directly aligned with the two tenets of Total Force Policy. The first research topic which is at the heart of this research paper, *Sizing and Shaping the Total Force*, seeks to answer the question of how the Total Force is "sized and shaped to meet the military requirements of National Security Strategy."¹⁴ The second research topic (which will be addressed at some future date in a companion paper), *Seamless Integration Between Active and Reserve Components*, seeks to answer "what are the requirements for seamless integration of Reserve Component (RC) forces with Active Component (AC) forces?"¹⁵

The purpose of this section is to design a conceptual model to study the research topics of sizing and shaping the Total Force and seamless integration between Active and Reserve Components of the United States Air Force using the military art¹⁶ and science of making strategy.¹⁷ The two concepts that will be postulated are coproduction and cooperative service. Coproduction is the topic for this research with cooperative service to be studied later in a companion study. Coproduction concepts focus on the most relevant issues to recommend how Total Force Policy may best be changed to size and shape the Active and Reserve Component force structure of the future.

AN ITERATIVE LOOK AT NATIONAL MILITARY STRATEGY

This new national military strategy, derived from the national security strategy and the defense framework outlined in the Bottom-Up Review, describes the critical role which the Armed Forces will play in helping to achieve our Nation's objectives. This is a strategy of flexible and selective engagement required to support our Nation's interests. Reflecting the ambiguous nature of our security challenges, the strategy emphasizes full spectrum capabilities for our Armed Forces.

General John M. Shalikashvili, Chairman of the Joint Chiefs of Staff, in a letter to introduce the National Military Strategy: A Strategy of Flexible and Selective Engagement, February, 1995¹⁸

An iterative, top-down, strategy and force planning framework developed by Richmond M. Lloyd interrelates national interests and objectives through the formulation of National Military Strategy to show the process of "allocation of scarce resources," and "the relationship among ends, means and risks."¹⁹

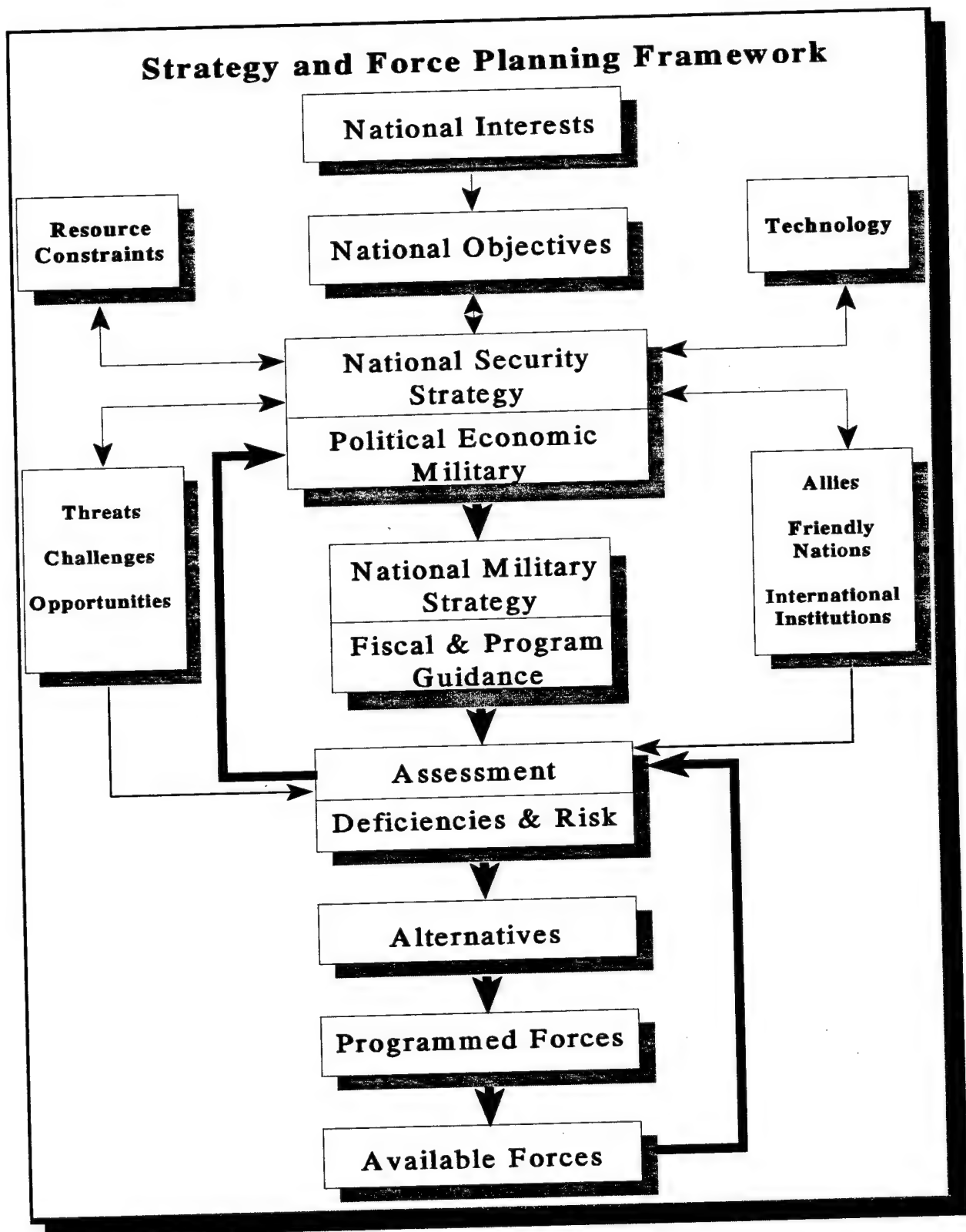


Figure 1.1
Strategy and Force Planning Framework²⁰

An examination of the interrelationships between National Interests, National Objectives, National Security Strategy, and National Military Strategy provides an important foundation for the design of the conceptual model.

President William J. Clinton links his Administration of the United States to the National Interest in the Preface of A National Security Strategy of Engagement and Enlargement, by stating, "Protecting our nation's security - our people, our territory and our way of life - is my Administration's foremost mission and constitutional duty."²¹ He continues by framing our national objectives in the context of a dynamically changing world order with "a national security strategy that is tailored for this new era and builds upon America's unmatched strengths."²² Focusing on new threats and new opportunities, its central goals are:

- *To enhance our security with military forces that are ready to fight and with effective representation abroad.*
- *To bolster America's economic revitalization.*
- *To promote democracy abroad.*²³

This world order is one in which "America's core value of freedom, as embodied in democratic governance and market economies, has gained ground around the world."²⁴ It is also one where "our national security strategy is therefore based on enlarging the community of market democracies while deterring and limiting a range of threats to our nation, our allies and our interests."²⁵ It is a strategy of engagement and enlargement that combines our National Interest to our National Objectives in three central components: "(1) our efforts to enhance our security by maintaining a strong defense capability and employing effective diplomacy to promote cooperative security measures; (2) our work to open foreign markets and spur economic global economic growth; and (3) our promotion of democracy abroad."²⁶

The National Security Strategy of Engagement and Enlargement has three broad characteristics important to the development of the National Military Strategy: (1) "the overall approach or master plan for accomplishing national objectives"²⁷ through (2) "both development and use of all the instruments of

national power (e.g., economic, political, military) *and* the coordination of these instruments in pursuit of (national) objective(s)²⁸, and (3) "the highest level connection and primary interface between nonmilitary instruments of power and the military establishment."²⁹ The Strategy of Engagement and Enlargement brought together these characteristics in full "range of political, military and economic instruments"³⁰ to advance our national objectives:

- Enhancing Our Security
- Promoting Prosperity at Home
- Promoting Democracy³¹

While the National Military Strategy is also concerned with advancing all of our national objectives, it is directly linked with the national objective of *Enhancing Our Security* by "Maintaining a Strong Defense Capability" where "U.S. military forces are critical to the success of our strategy."³² The Strategy of Engagement and Enlargement explicitly states: "To protect and advance U.S. interests in the face of the dangers and opportunities outlined earlier, the United States must deploy robust and flexible military forces that can accomplish a variety of tasks."³³

- *Deterring and Defeating Aggression in Major Regional Conflicts*
- *Providing a Credible Overseas Presence*
- *Countering Weapons of Mass Destruction*
- *Contributing to Multilateral Peace Operations*
- *Supporting Counter terrorism Efforts, Fighting Drug Trafficking and Other*
- *National Security Objectives*³⁴

In turn, the new enunciated National Military Strategy by General Shalikashvili, Chairman of the Joint Chiefs of Staff, supports the National Security Strategy of Engagement and Enlargement with A Strategy of Flexible and Selective Engagement. While a broad range of military activities and capabilities exists for **flexible and selective engagement** to address and help shape the evolving international environment, "the fundamental purpose of the Armed Forces must remain to fight and win our Nation's wars."³⁵

The National Military Strategy calls for the U.S. military to address the national interests of **regional instability; the proliferation of weapons of mass destruction; transnational dangers; and**

dangers to democracy and reform; through two national military objectives - promoting stability and thwarting aggression.³⁶ To promote stability and thwart aggression, the U.S. military would do well to use the three components of the flexible and selective engagement strategy of peacetime engagement, deterrence and conflict prevention, and fighting and winning our nation's wars; in concert with the two complementary strategic concepts of overseas presence and power projection.³⁷

Complemented by the Bottom Up Review, the National Military Strategy set the core requirement for combat forces and supporting capabilities of "fighting and winning two major regional conflicts nearly simultaneously."³⁸ This requirement, along with other needs, determines the military's force structure built on five fundamental foundations: **high quality men and women** who comprise the military forces, maintaining **high readiness** of those forces, **enhancements** to improve capability of the forces, **modernization** to ensure future readiness, and **balance** to retain the appropriate mix of forces and capabilities.³⁹ The fundamental foundation of **balance** explicitly refers to the appropriate mix of forces between combat and support forces, the right mix between active and reserve forces, and the appropriate balance between force structure and infrastructure.⁴⁰ Therefore, the concept of **balance** is directly involved in the examination and evaluation of the Air Force's Total Force Policy and is directly impacted by the concepts of *Sizing and Shaping the Total Force* and *Seamless Integration Between Active and Reserve Components*.

STRATEGY ASSESSMENT MODEL

The Air Force should be organized to make full, effective, and coordinated use of its total force. Reserve and National Guard forces comprise a major portion of Air Force aerospace power. The effective integration of the total force must have a high priority in Air Force organizational decisions.

Air Force Manual 1-1, Volume I, Basic Aerospace Doctrine of the United States Air Force, United States Air Force⁴¹

Lloyd in his strategy and force planning framework deals with two concepts: "(1) the allocation of scarce resources, and (2) the relationship among ends, means and risks."⁴² This approach of looking at the National Military Strategy traces National Interests through National Objectives to the National Security Strategy of Engagement and Enlargement to the development of the current National Military Strategy of Flexible and Selective Engagement. Using the framework to evaluate the current Total Force Policy, the "central core" of the top half of Lloyd's model would appear as follows:

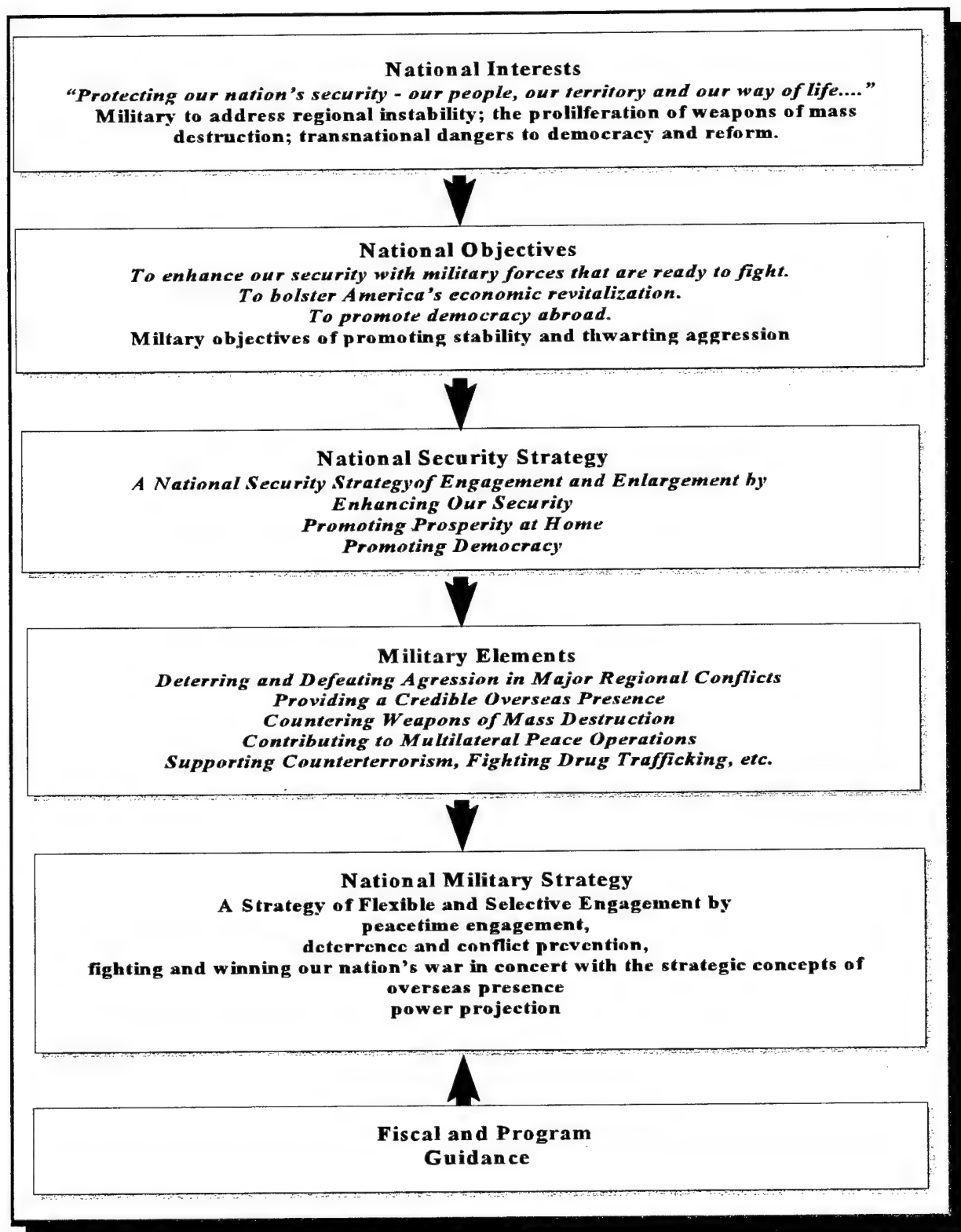


Figure 1.2
"Top Half" of the Strategy and Force Planning Framework

The National Military Strategy - Fiscal and Program Guidance is the center of Lloyd's framework where the allocation of scarce resources takes place with its relationship between ends, means and risks. To examine and evaluate the Total Force Policy one would need a frame of reference to understand the finer details of the interrelationship between National Military Strategy and Fiscal Program guidance. These dynamic interrelationships can be studied by using the Bartlett Model of Strategic Development.⁴³ The Bartlett model presents a very flexible frame of reference which interrelates Strategy with Forces (means) to attain the Objectives (ends) where risk is the measure of the mismatch between ends and means.⁴⁴

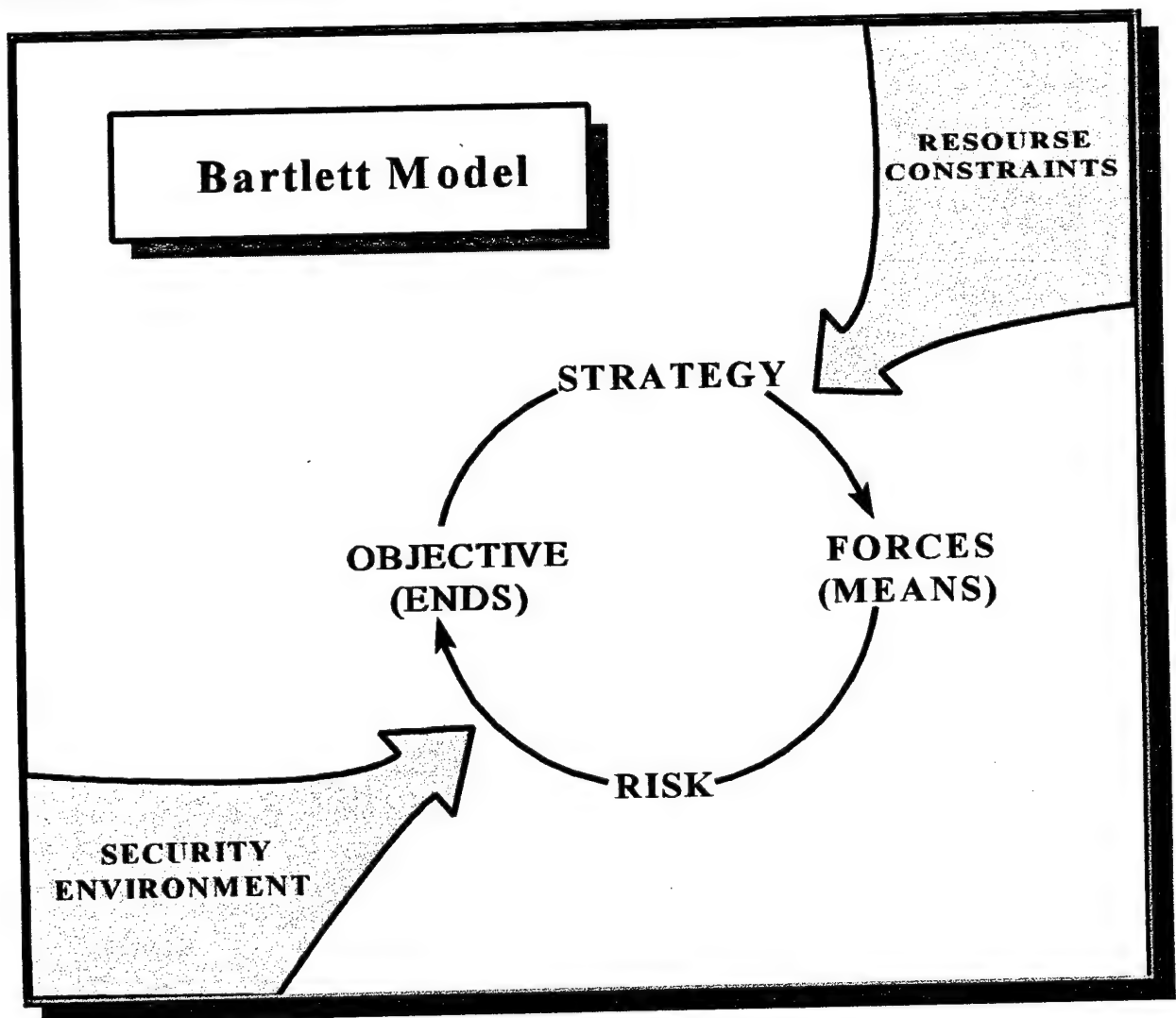


Figure 1.3
Bartlett Model of Strategic Development⁴⁵

The flexibility of the Bartlett Model allows it to be used with all levels of strategic development from the highest level such as objectives of the National Military Strategy to the lower-level goals of a policy such as elements of the Air Force's Total Force Doctrine. Just as importantly, the Bartlett Model can be viewed as dynamic, with the effects of a strategy examined as it runs through the model over time or through phases of implementation. For example, a strategy could be run through the model three times to examine and evaluate the three tenets of military strategy: its employment, development, and deployment.⁴⁶ By adding this perspective it is possible to observe the coordination process associated with the strategy and, thereby, add another aspect of risk appraisal.⁴⁷ For now, to illustrate the National Military Strategy where resources are the key to force development⁴⁸:

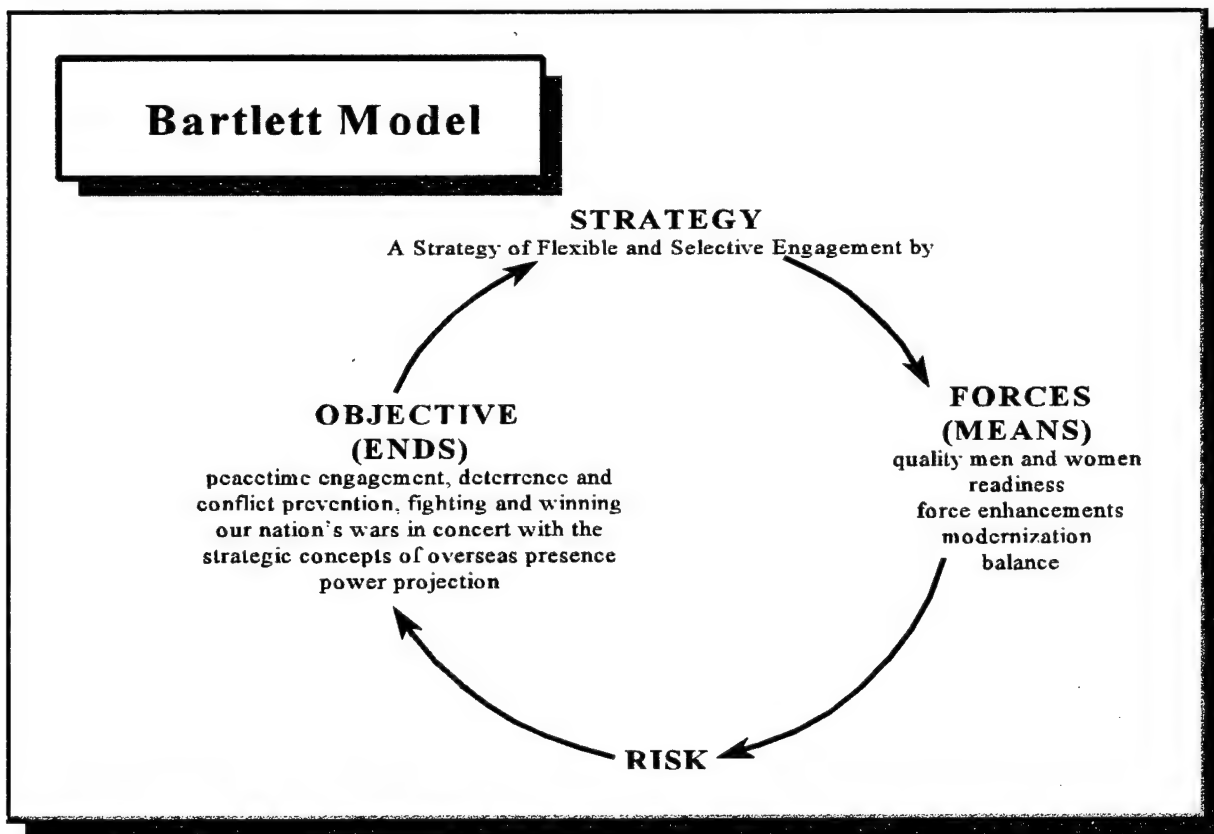


Figure 1.4
Bartlett Model: A Strategy of Flexible and Selective Engagement

Having just matched the five fundamental elements of the military's force structure to the objectives of the National Military Strategy, the Total Force Policy may be examined and evaluated against the strategy of flexible and selective engagement. The five fundamental elements of the military force structure now become the Objective or the desired end. The forces or means, as evolved through the two tenets of total force, further developed through Deborah Lee's Goal No. 1 and 2, are now defined in terms of the JCS research topics of *Sizing and Shaping the Total Force*, and, *Seamless Integration Between Active and Reserve Components*. The amount of risk is the mismatch between the elements of the force structure and the means to obtain it. To illustrate:

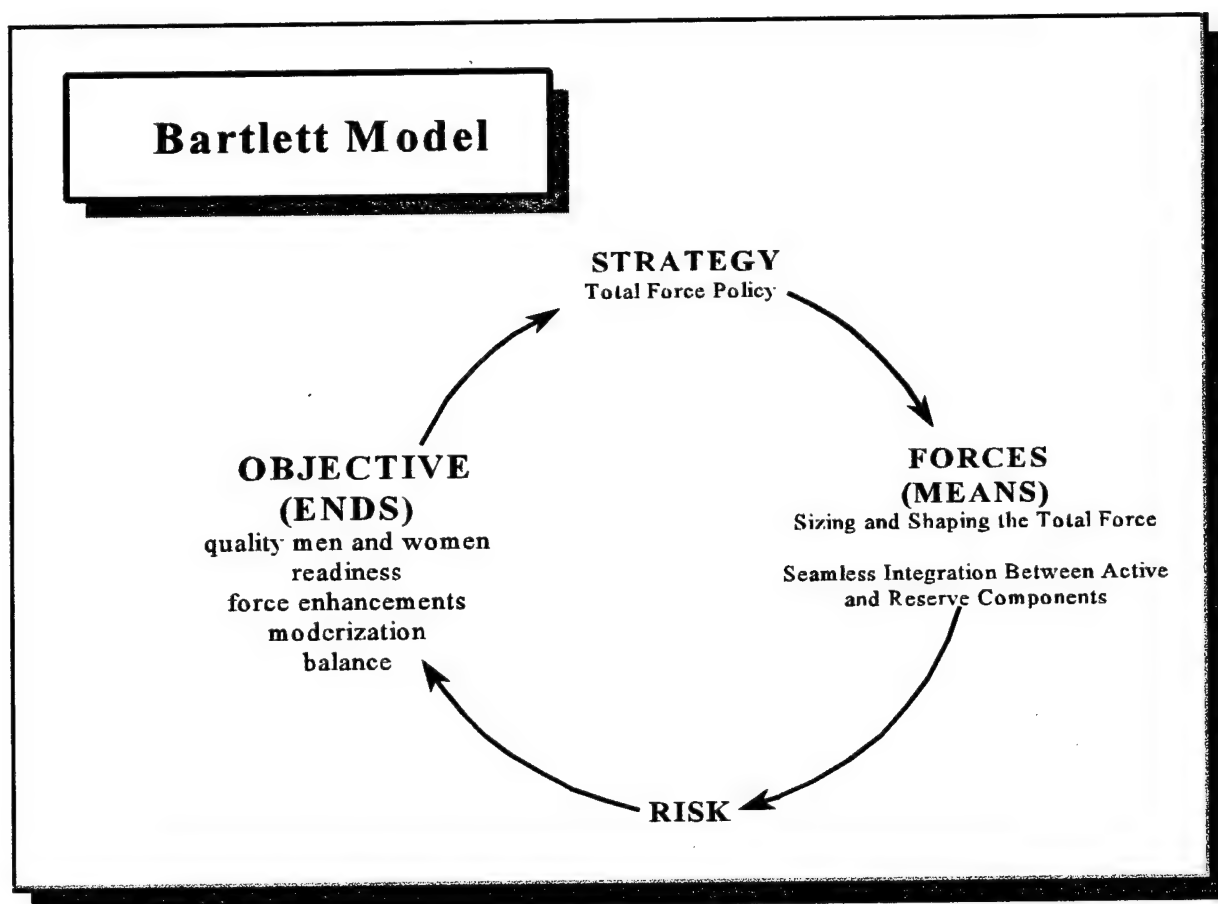


Figure 1.5
Bartlett Model: Total Force Policy

This provides the necessary interrelationship to examine the Total Force Policy using the National Military Strategy's force structure as the objective or the end result and the concepts of *sizing and shaping the total force and seamless integration between active and reserve components* as the means of evaluation. Risk is expressed in terms of any mismatch between the objective and the means.

Because the Air Force is the focus of this study along with its application of the Total Force Policy, the objective or the end result will be further defined using the Air Force's strategy to implement the National Military Strategy. Known as Global Engagement: A Vision for the 21st Century Air Force, the strategy builds upon the tenets of the National Military Strategy to integrate the central themes and core competencies upon which "Global Engagement" is based along with the three categories of issues of capabilities, people and organization.⁴⁹

- *Central Themes of Global Engagement:*
 - *Integration of Air and Space*
 - *Airman of Tomorrow*
 - *Commitment to Innovation*
 - *Increased Efficiency Through Outsourcing and Privatization*
- *Core Competencies*
 - *Air and Space Superiority*
 - *Global Attack*
 - *Rapid Global Mobility*
 - *Precision Engagement*
 - *Information Superiority*
 - *Agile Combat Support*
- *Capabilities*
 - *Information Warfare*
 - *BM/C2*
 - *Nuclear Weapons*
 - *Global Presence and Global Projection*
 - *Future Space Operations*
 - *Ballistic and Cruise Missile Defense*
- *People*
 - *Core Values*
 - *Career Patterns*
 - *Active and Reserve Component Mix*

- *Organization and Infrastructure*
 - *Basing*
 - *Acquisition Infrastructure*
 - *Test and Evaluation*
 - *Sustainment*⁵⁰

This provides the necessary interrelationship to examine the United States Air Force's force structure. Substituting the strategy elements of Global Engagement for the Military National Strategy, the means to ends relationship with the associated risk of the Air Force's Total Force may be represented by the Bartlett Model. Also, to tailor the model to the Air Force, the more specific concepts of *sizing and shaping the Air Force's total force and seamless integration between USAF active and reserve components* will be used as the means of evaluation. To conceptualize:

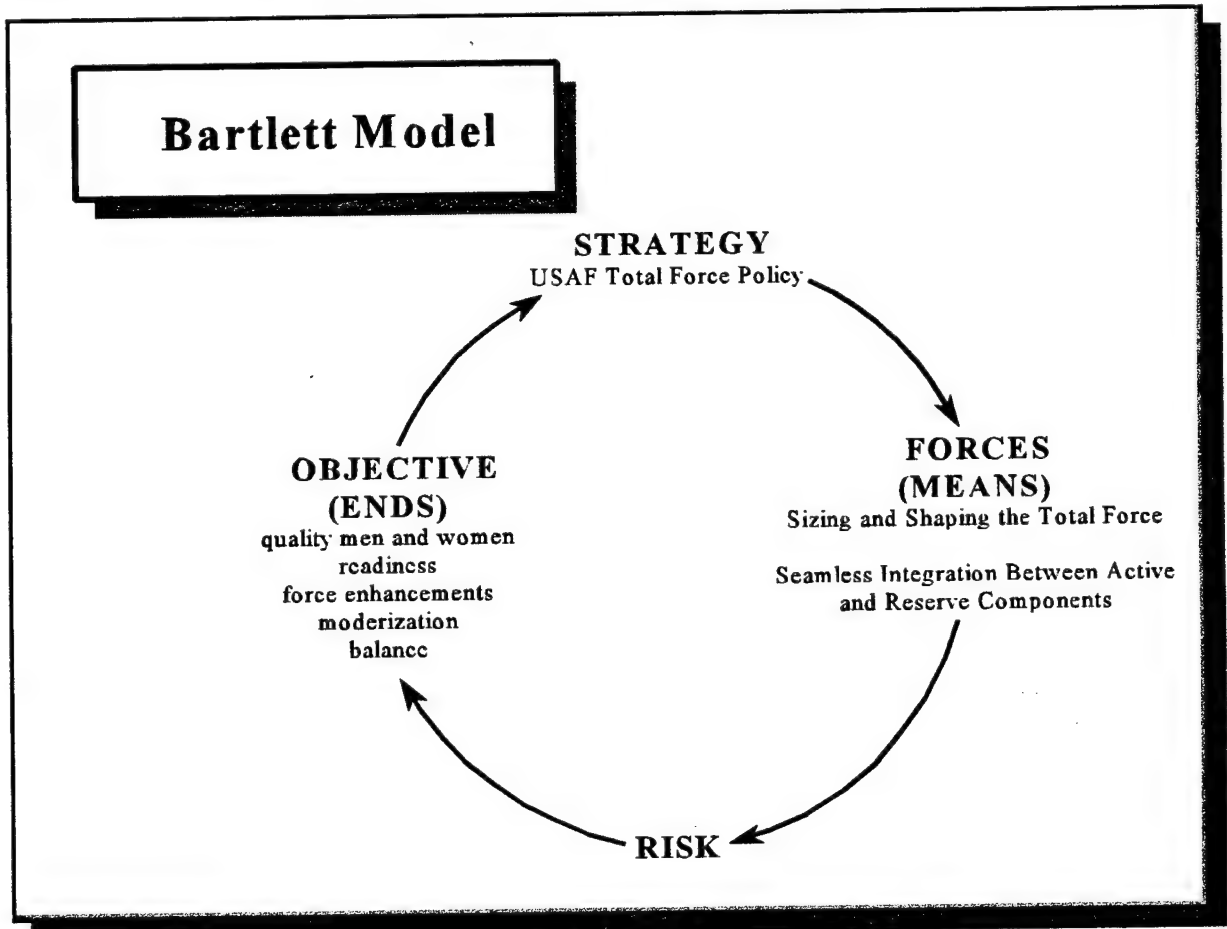


Figure 1.6
Bartlett Model: USAF Total Force Policy

USING COPRODUCTION IN STRATEGY ASSESSMENT

It is necessary to better understand the Air Force's implementation of the Total Force Policy in order to better understand the concepts of sizing and shaping the total force and seamless integration. The Air Force describes how it intends to implement the Total Force Policy in Air Force Manual 1-1, Basic Aerospace Doctrine of the United States Air Force, paragraph 4-2a:

The Air Force should organize to make full, effective, and coordinated use of its total force. Reserve and National Guard forces comprise a major portion of Air Force aerospace power. The effective integration of the total force must have a high priority in Air Force organizational decisions.⁵¹

The Air Force integrates the Total Force Policy into its organizational doctrine. "Organizational doctrine is best defined as basic beliefs about the operation of a particular military organization or group of closely linked military organizations."⁵² It is the organizational design of the Air Force formed out of its political realities, capabilities, and cultural values⁵³ where (o)rganizational design can spell the difference between success and failure.⁵⁴ By the adoption of Total Force into its organizational doctrine, the Air Force believes organizing for total force is the best way to conduct its military affairs . . . "the best way to do things."⁵⁵

Now the Bartlett model may be used to examine and evaluate the Air Force's doctrine of total force. The doctrine of total force becomes the strategy under investigation. The concepts of *sizing and shaping the Air Force's total force* and *USAF seamless integration between active and reserve components* now become the Objective or the ends of the strategy. The means are the social science theories of coproduction and cooperative service as adapted to apply to the conceptual model featuring the organization of the Air Force. The coproduction concept creates an added benefit to an organization - the Air Force - with citizen participants - the Reserve Component - and government officials - Active Component - work together. This is the topic of Section Two, the *Application of Coproduction Concepts to "Sizing and Shaping" the Total Force*.

Risk, once again, is measured in terms of the mismatch of resources between the means of coproduction and cooperative service and the ends of seamless integration and sizing and shaping the total force. To illustrate:

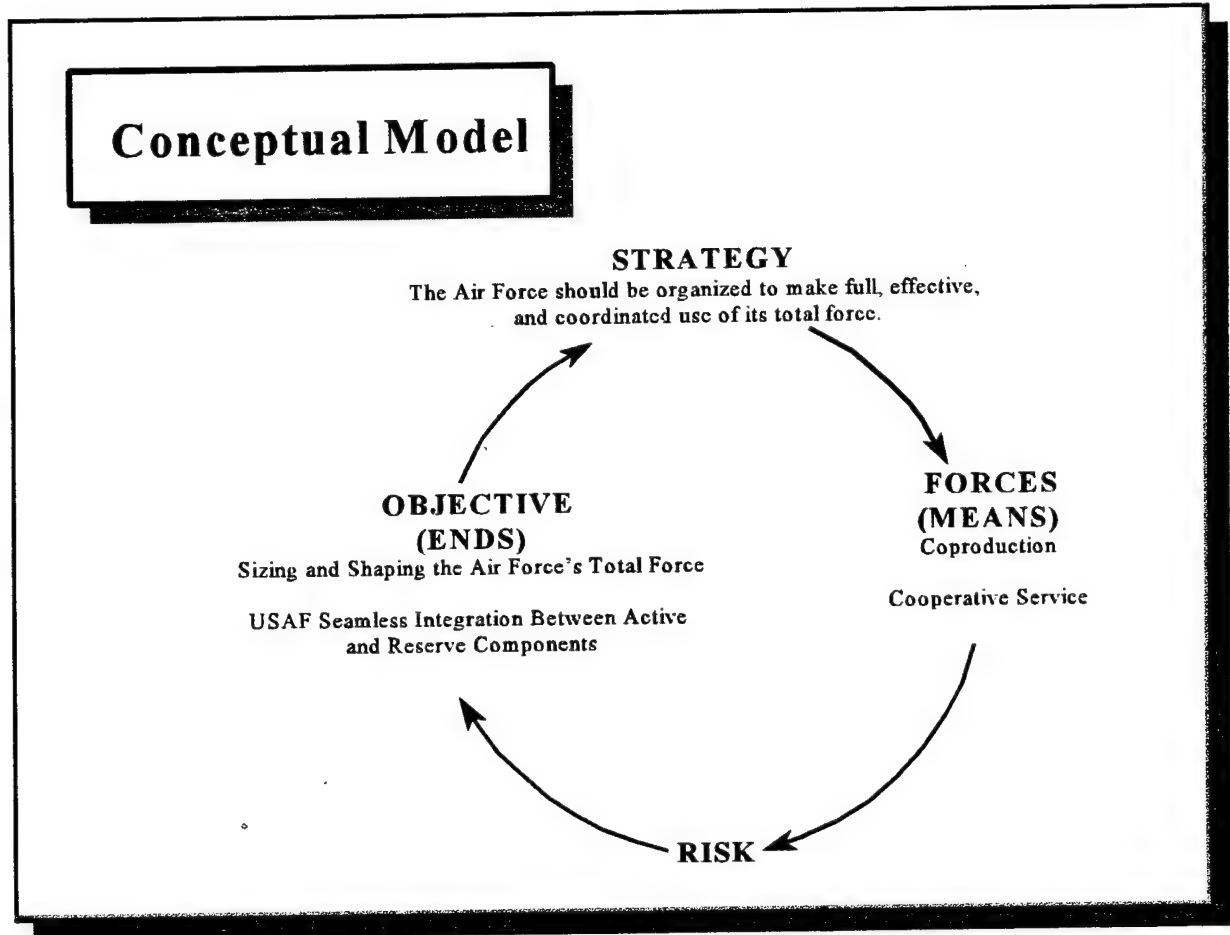


Figure 1.7
Conceptual Model

This is the conceptual model created to examine and evaluate the organizational development of the Air Force's Total Force Doctrine using the JCS Research Topics of *sizing and shaping the total force* and *seamless integration between active and reserve components* as the objectives of the evaluation. Using the social science concepts of *coproduction*, and, later in a companion study, *cooperative service*, this model allows for a better understanding of seamless integration and sizing and

shaping the total force. As, always, risk will be expressed in terms of any mismatch between the objective and the means.

PPBS PROCESS TO SIZE AND SHAPE THE TOTAL FORCE

As a general proposition, of course, the most effective mix of Active and Reserve forces is one that provides a balance of capability with minimum risk across the range of likely threats and within the parameters of available resources.

*Stephen M. Duncan,
Assistant Secretary of Defense for Reserve Affairs⁵⁶*

The National Military Strategy - Fiscal and Program Guidance is the center of the Lloyd framework. The "top half" of the model shows the linkage between the different levels of strategy. The "bottom half" of the model specifies the allocation of scarce resources with which to attain the strategy.⁵⁷ This examination does not emphasize the "top down" approach that was used in the "top half" of the model, but, instead emphasizes a "fiscal-budget-based" approach.

The fiscal-budget-based approach uses the adage "follow the money" where the pivotal issue is the budget which drives the size and shape of the Total Force.⁵⁸ Limited fiscal resources are apportioned based on political, economic, and military tradeoffs.⁵⁹ Six primary military tradeoffs are force structure, modernization, Readiness and Operational Tempo (OPTEMPO), Support Infrastructure, Capability, and Risk Assessment.⁶⁰ By and large, risk is determined by the degree of balance or imbalance the mix of tradeoffs provides against the attainment of the desired strategy.

A critical junction for policy implementation then occurs at the intersection of the "top down" and "fiscal-budget-based" approaches. This is the point where strategy is provided resources. The United States Air Force is linking its "top down" strategic vision of Global Engagement to the "fiscal-budget-based" Planning Programming Budgeting System (PPBS) with its Long-Range Plan.⁶¹ The Long-Range Plan uses "cascading integration" to link the strategic vision of Global Engagement with the Mission Area Plans and the Program Objective Memorandum.⁶² Conceptually, Lloyd's center block showing the

National Military Strategy - Fiscal and Program Guidance intersection may be changed to show the Air Force methodology:

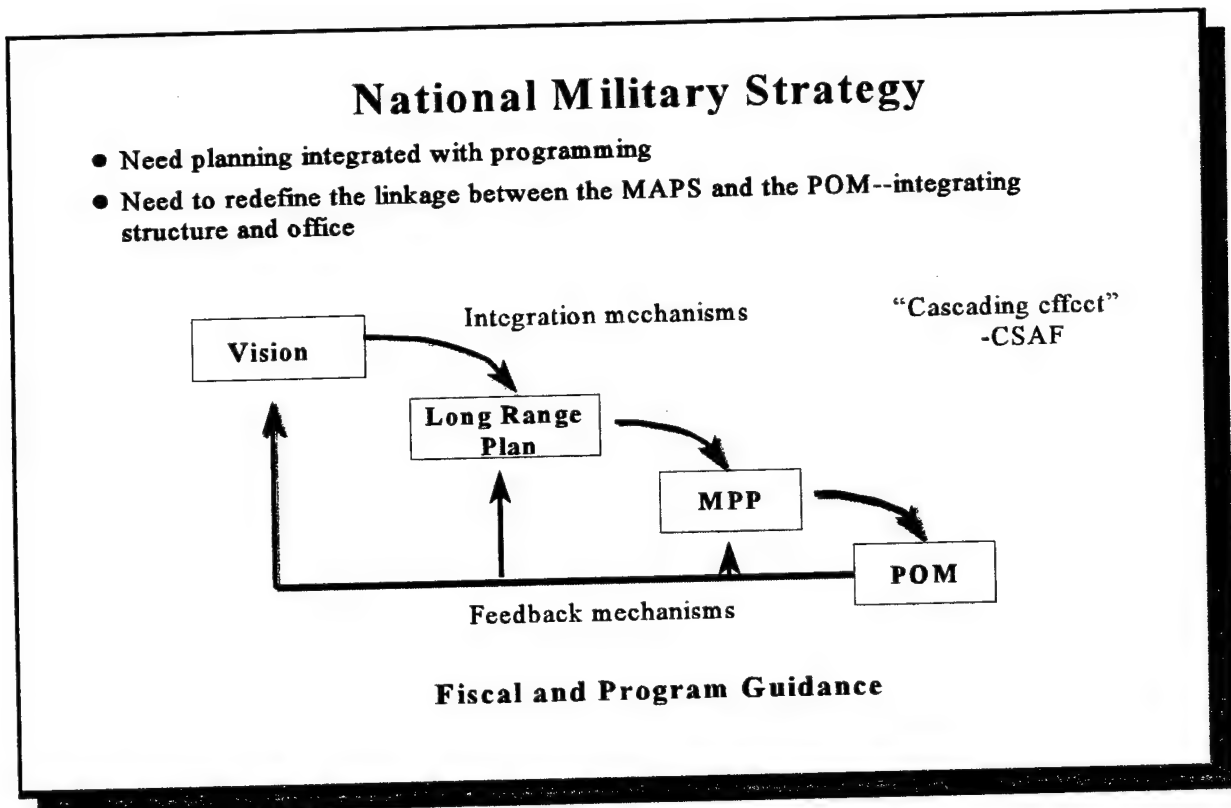


Figure 1.8
Air Force Long Range Planning⁶³

The Long Range Plan is new. Its goal of "ensuring stronger links between AF directions and priorities, and DoD-wide POM programming activities,"⁶⁴ is not scheduled for full implementation until October of 1998.⁶⁵ The plan seeks to affect how money is spent through a consistent process of tying the strategic vision - the overall direction for the future - to the activities of the CINCs and major commands (MAJCOMS) - responsible for doing the work of today - to the supporting PPBS process - the mechanism that allocates the resources.⁶⁶

Lloyd, in his strategy and force planning framework, examines the "fiscal-budget-based" process in the lower half of his model. Important to the framework are the assessment - deficiencies and risk

block where assessment forms the link between strategic policy and force composition.⁶⁷ A strategy-force mismatch exists when there is either a deficiency in the force structure to accomplish the strategy, or there is an acceptance of additional risk.⁶⁸ Visually, the "fiscal-budget-based" process may go from the Fiscal and Program Guidance through assessment - deficiencies and risk block, to the force building steps of alternatives and programmed forces to derive the available forces.



Figure 1.9
"Bottom Half" of the Strategy and Force Planning Framework⁶⁹

The available forces may now be assessed against the strategy. This assessment can then be "plugged into" the top half of the model to impact the National Security Strategy. SAIC emphasizes a

similar approach with its examination of Sizing and Shaping the DoD Total Force.⁷⁰ Contracted by the JCS to answer the same CORM concern as this research - "to size and shape Reserve Components more consistently with national security needs" - SAIC utilizes a "fiscal-budget-based" approach.⁷¹ SAIC's observations concerning the Air Force Sizing and Shaping Process may be used as the embodiment of the bottom half of Lloyd's model. As such, these observations, will provide an important backdrop to this research by providing the "fiscal-budget-based" context of sizing and shaping.

SAIC's Appendix C on the Air Force Sizing and Shaping Process⁷²:

APPENDIX C

Air Force Sizing and Shaping Process

Today, the Air Force's resource planning process is both highly decentralized and interactive, and based on the requirements of a total Air Force capability. The Air Force accomplishes this by allocating resources against mission areas as a whole. Mission areas are integrated and resourced at senior levels early on in the process to ensure complete attainment of the Air Force's primary missions, as well as the Air Force's role in the DoD Total Force Policy. The ultimate goal of the Air Force resource planning process is to achieve the defense objectives established by the President and the SECDEF in the DPG.

C.1 THE AIR FORCE SIZING AND SHAPING PROCESS

Decisions governing the size and shape of the Air Force are made in the framework of national security policy established by the President, defense policy established by SECDEF, and National Military Strategy (NMS) determined by the JS. Current national security policy is one of "engagement and enlargement"; national defense policy reflects these concepts in the BUR/2-MRC framework, and NMS is one of "flexible and selective engagement". The primary objectives laid down by the NMS (promote stability and thwart aggression), and their subsidiary objectives (peacetime engagement, deterrence and conflict prevention and fight to win) provide the framework of strategic goals for shaping the entire U.S. defense posture, including the Air Force.

Decisions regarding United States Air Force's (USAF) shape and size are further governed by DoD's PPBS process and by the joint planning process. There are a number of constraining factors that determine force structure. These include: CINC priorities, country manpower authorizations, mutual security commitments, manpower strength ceilings, congressional limitations for the current year, and OSD considerations. Because the Air Force planning process follows the PPBS cycle, structure changes are limited to within and among the Air Force Program Elements (PE) only. However, the SECDEF can approve major force structure changes and associated procurement and research and development

increases within the total Air Force manpower or dollar levels during the POM cycle. The POM is viewed by the Air Force as a means to balance total Air Force program recommendations with OSD fiscal constraints, operational guidance as provided in the DPG, and requirements levied by the CINCs and JS. In essence, the Air Force's job is to develop the forces needed by the CINCs, whose requirements and priorities are determined not only by the CINCs, but also by JS and OSD.

C.1.1 The Planning Cycle

The Air Force planning cycle begins after the DPG and fiscal guidance are issued by OSD. Air Staff planners (USAF/XO) assess threats, determine necessary resources, and provide program guidance and priorities to the Major Commands (MAJCOMS) through the Air Force Executive Guidance. Force structure estimates are based on the accomplishment of separate peacetime and wartime mission requirements based on this executive guidance. Manpower analysis is performed once a year by USAF/XO and the Director of Programs and Evaluation (USAF/PE) with input provided by the Major Commands, Direct Reporting Units (DRUs), Field Operating Agencies (FOAs), the Air Force Reserve (AFRES), and the Air National Guard (ANG).

Peacetime manpower requirements for *Title 10* responsibilities of organizing, training, and equipping are developed using the Air Force Manpower Standards (AFMS). Operations and aircraft maintenance requirements are intentionally sized to satisfy the higher wartime requirements, while other support forces are sized only to Peacetime requirements. It is anticipated that manpower support force surges during wartime will be augmented with temporary personnel. Additionally, built-in hedges such as casualty replacement fillers and an errors and omissions number are factored into the manpower requirements equation.

Wartime manpower planning uses a force sizing processes called Force Sizing (FORSIZE) exercise and the Base Level Assessments (BLA) to present the Total Wartime Demand for manpower. It uses two separate but interrelated parts, deployment requirements in the form of a Time Phased Force Deployment List (TPFDL) and the Base Level Assessments (BLA), to present the Total Wartime Demand for manpower. Used together they represent estimates of the deployment forces needed for specified wartime scenarios, as well as those forces which are not resourced in deployment plans but are necessary to move and sustain the deployed forces and continued operations at home stations. This assessment aids in determining the necessary manpower skill requirements and mix to be obtained from the active component, reserve component (ANG and AFRES), Individual Mobilization Augmentees (IMAs), and civilian personnel (to include both federal employees and government contractors). Key planning documents consulted during the Planning phase include:

- Joint Intelligence Estimate for Planning (JIEP)
- Joint Strategic Planning Document (JSPD)
- Defense Planning Guidance (DPG)
- Air Force Strategic Assessment
- Air Force Planning for Requirements and Acquisition

- Air Force Planning Guidance (AFPG)
- Air Force Benchmark Analysis
- Air Force Planning Force
- Air Force Program Guidance
- Future Years Defense Program (FYDP)
- Air Force Executive Guidance

C.1.2 The Programming Cycle

The Programming phase identifies funds available to achieve the most appropriate force structure given fiscal limitations. The Defense Planning Guidance is the starting point of the programming cycle and the POM is the principal product of the PPBS programming step, as well as being the building block for the Air Force and Financial Plan (F&FP)/Future Years Defense Program (FYDP).

The following key documents are consulted by the Air Force during the POM development:

- Defense Planning Guidance (DPG)
- Fiscal Guidance (FG)
- Future Years Defense Program (FYDP)

Key programming phase products include:

- Program Objectives Memorandum (POM)
 - P-Series Documents (procurement)
 - RDT&E Descriptive Summaries
- Issue Books
- Program Decision Memorandum (PDM)
 - Air Force and Financial Plan (F&FP)

Under the new Air Force Global Reach-Global Power (GR-GP) Resource Allocation Team structure, resource allocation decisions that support the POM are developed during the Resource Allocation Process (RAP) and are analyzed along mission lines. During this phase seven Resource Allocation Teams meet to screen resource and programming issues associated with the Air Force PEs. PEs and PE assignments are made by the SECAF and are aligned to reflect force structure or support functions of the RA team. RA teams serve as a focal point for evaluating, prioritizing, developing and recommending options, and coordinating adjustments to programs. RA teams interface with MAJCOMs often during development of the POM in order to translate CINC requirements into programmatic terms, to include program elements, required funding, and program trade-off decisions.

In 1995, the corporate Air Force designed a deliberative corporate structure, cross-functional and matrixed, which presents to the SECAF and CSAF optimum sets of alternatives on an unconstrained set of subjects. The resulting improvements include expanding the membership of the Air Force Board

(AFB), establishing the Air Force Group (AFG), realigning the existing resource allocation teams into mission and mission support panels, and implementing Integrated Process Teams (IPTs) for major programs, weapons systems, and issues.

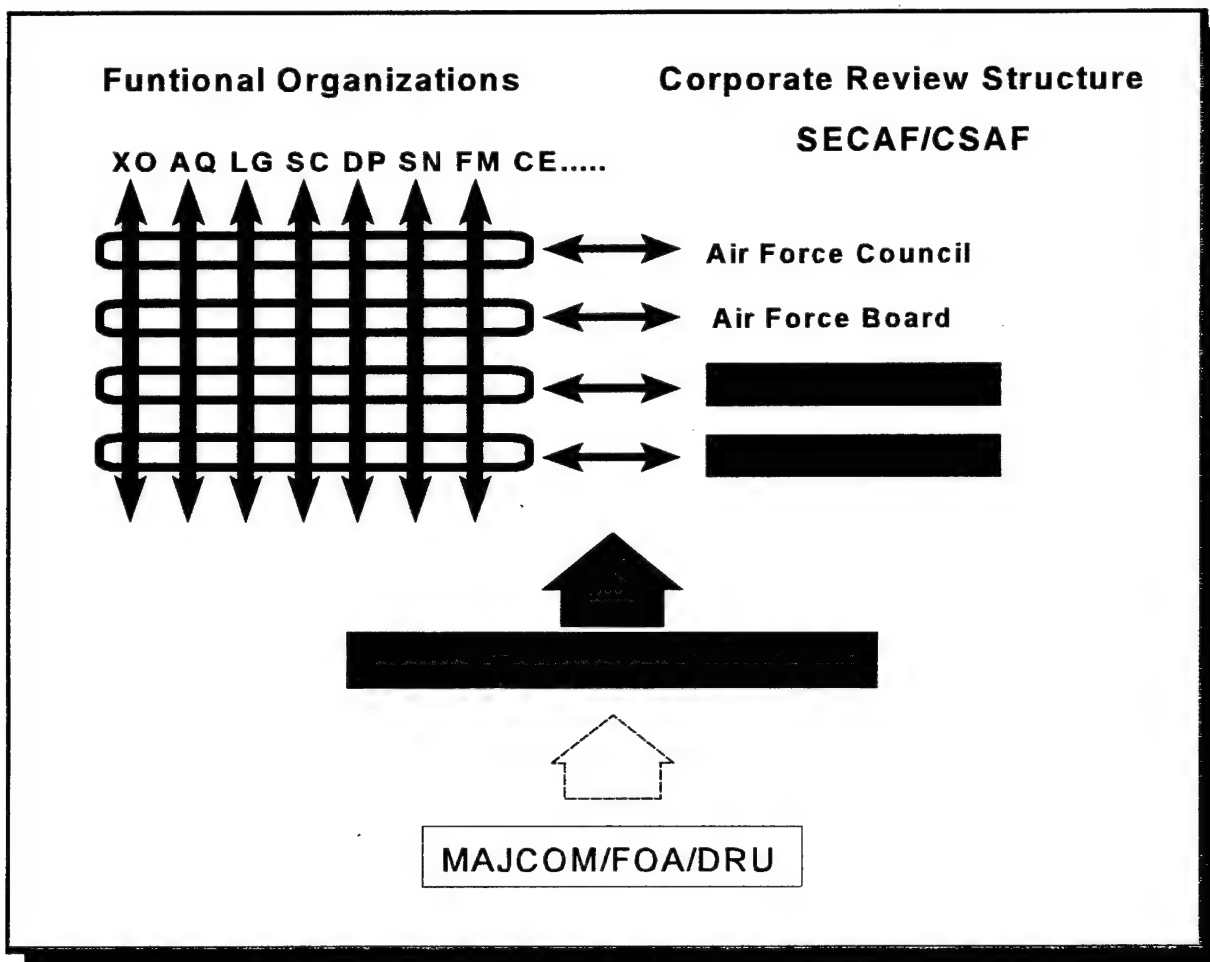


Figure C-1
[Air Force Corporate Review Structure]

Figure C-1 shows the relationships that are fundamental to the new way of doing business. The strength of the process is the consistency of corporate reviews tied to successive levels of the functional staff. It is not intended to supplant the staff but to enhance it. The staff will continue to conduct its functional reviews and enter the corporate review structure at the appropriate level. Major Commands (MAJCOMs) will work through the corporate review structure, functional organizations, and IPTs for programs and specific issues. The new enhanced corporate structure includes the addition of the Air Force Group, 10 Panels, and 70 IPTs. It formalizes existing informal networks and offers an open process for future enhancements. AF/PE will be the focal point for an Panel and IPT adjustments.

C.1.3 The Enhanced Corporate Process

The enhanced corporate process will involve more people at all levels and thus provide Air Force senior leaders with corporate positions while preserving the responsibilities of functional organizations. The Air Force Council (AFC) is the final senior forum for corporate review and deliberation of HQ USAF issues and is supported by a well-defined corporate structure. Below the AFC are the following elements: the AFB, the AFG, the Mission Panels, the Mission Support Panels, and the IPTs.

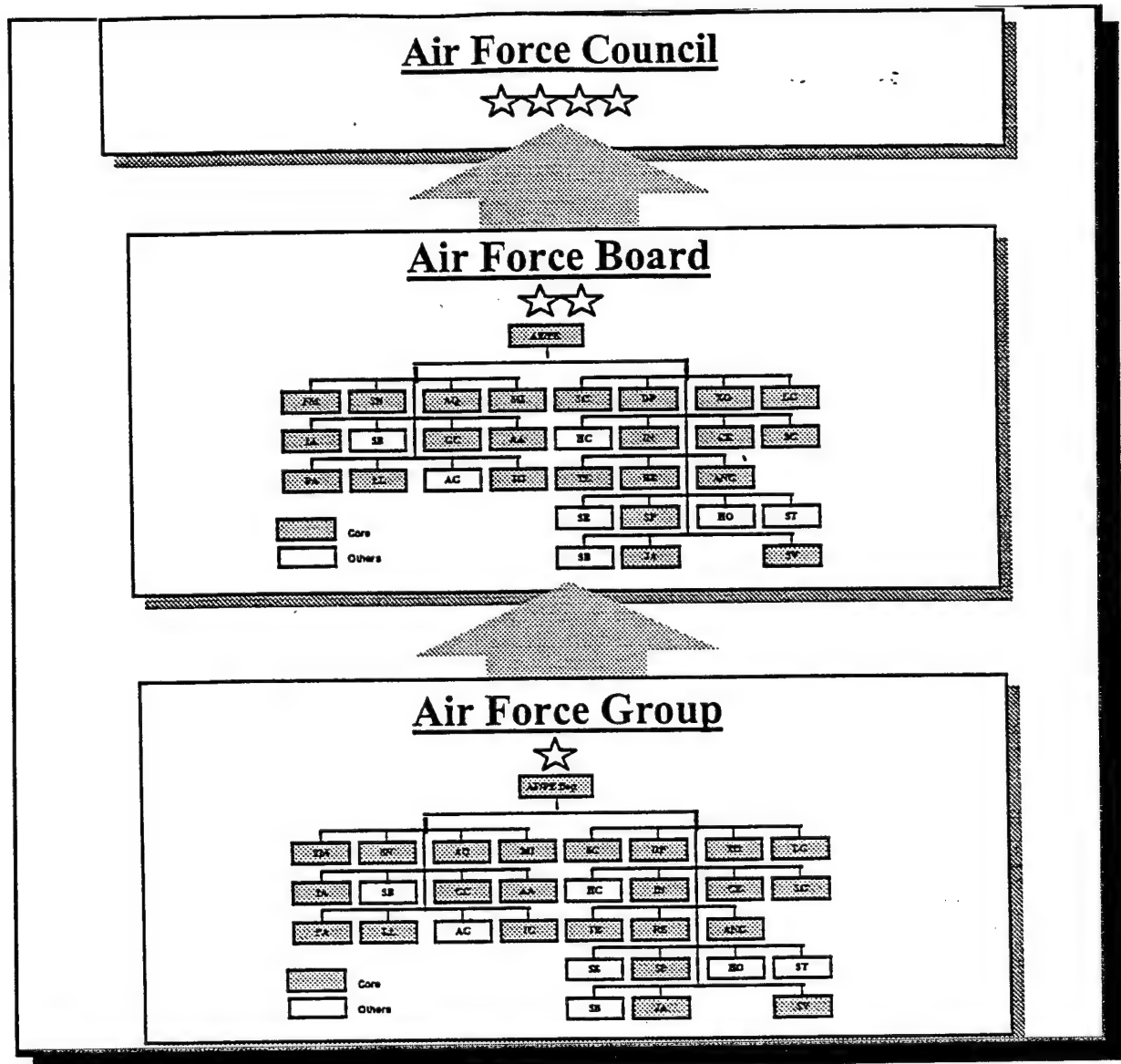


Figure C-2
[Air Force Corporate Membership]

C.1.3.1 Air Force Board (AFB)

The AFB integrates corporate reviews into the resource allocation process and enhances the corporate decision making process. It provides a forum for senior leadership to apply their collective judgment and experience to major programs objectives and problems. The membership of the AFB was expanded to better utilize functional expertise of the HQ USAF staff in making corporate decisions. AFB membership is shown in Figure C-2.

C.1.3.2 Air Force Group (AFG)

The AFG serves the senior leadership as the first corporate integrated review and evaluation of programs and issues. The AFG reviews programs en route to the AFB and reviews issues as directed by the senior leadership.

The value added by this group is that it will do much of the preliminary screening that fell to the AFB in the current corporate process. The AFG will uniquely serve the leadership as the first integrated corporate review forum for issues and programs. The AFG will coordinate diverse and competing interests and task Panels and Integrated Process Teams to develop program options. Throughout the year, the AFG will direct and conduct reviews of all Air Force programs to ensure balance within expected and projected fiscal limitations. During POM development, the AFG is empowered with "off-the-table" decision authority as it brings forward to the Air Force Board options that will provide the senior leadership with a balanced Air Force program within fiscal guidance. Over time, this corporate group will most likely review more special interest issues as directed by senior leadership or as requested by functional organizations.

Members of the AFG are Colonels and civilian equivalents, and the AFG is chaired by the Deputy, Air Force Programs and Evaluations. AFG membership is shown in Figure C-2.

C.1.3.2.1 AFG Goals. The goals of the AFG within the Air Force corporate structure is to provide a thorough review and evaluation of programs presented by the Panels en route to the AFB. The AFG will also provide its members experience in cross-functional decision making.

C.1.3.2.2 AFG Definition. The AFG is a formal body with membership drawn from throughout HQ USAF. Members are empowered to consider and recommend resolution of issues consistent with Defense Guidance, Air Force Executive Guidance, and fiscal constraints for the corporate structure. The AFG provides guidance to Panels and coordinates diverse and competing interests. The AFG tasks Panels and IPTs for program options, and directs and conducts review of all Air Force programs to ensure balance within expected or projected fiscal limitations.

C.1.3.2.3 AFG Roles and Responsibilities. The AFG is the entry point for Panels and IPTs into the corporate review structure. It will oversee all programming products en route to the AFB. It will receive information briefings needed to analyze programs and develop alternatives. The AFG will forward significant and critical issues for AFB/AFG review and deliberation. It will provide Panels and IPTs with feedback and guidance on their activities. The AFG will meet at the discretion of the AFG Chair for the following purposes: review program options for compliance with Air Force guidance; validate cost, schedule and completeness of program options; develop new options as needed; entertain new initiatives to meet core competencies or requirements; receive briefings as necessary to make informed decisions on Air Force programs.

C.1.3.3 Panels

Ten new Panels were developed by realigning the Air Force Resource Allocation Teams to more closely reflect core missions and supporting foundations of the Air Force. This new structure facilitates corporate insight into the resources allocated for each core mission. It also permits senior leadership a view of the level of investment in crosscutting programs. The panels serve as the HQ USAF "centers of expertise" and represent the first level of corporate deliberation for the five Mission and five Mission Support areas. Panel membership includes cross-staff functional expertise from HQ USAF organizations. This will ensure that all aspects of a given program proposal are thoroughly evaluated before being presented to the AFG. Panel Chairs will nominate functional staff elements for panel membership to AFB through the AFG for approval. Chairs will be Colonels or civilian equivalents from AF/XO, SAF/AQ, AF/LG, AF/CE, AF/SC, and AF/DP. Air Force programs allocated to the ten panels are listed in Appendix A. The Mission and Mission Support panels as well as Programs are depicted in Figures C-3 and C-4 respectively. Panels are responsible for the development of programs and evaluation of proposals for presentation to the AFG. While retaining a corporate perspective for programs within their respective mission and mission support area, Panels must still play the role of an "advocate" within the corporate process. Panels task IPTs and interface with other panels to ensure a balanced and complete review. The relationships between a typical Mission Panel and Mission Support Panels with other agencies are shown in Figures C-3 and C-4 respectively.

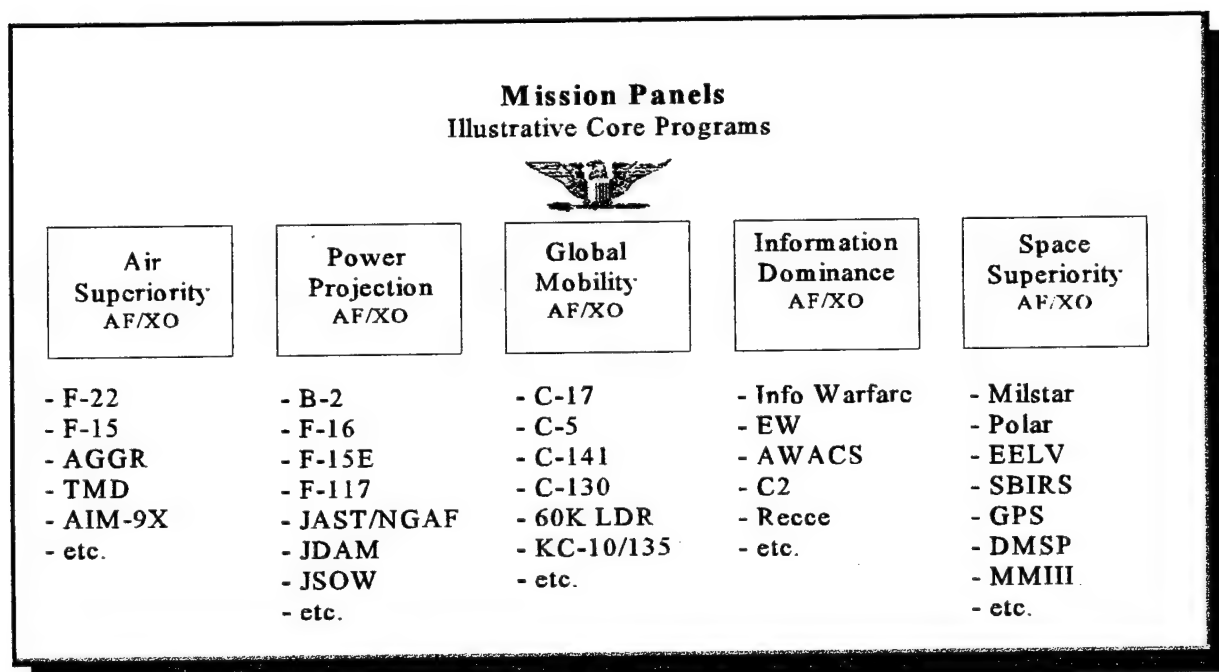
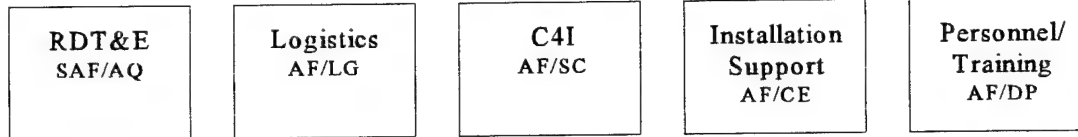


Figure C-3
[Mission Panels]

Mission Support Panels
Illustrative Programs*



Core

- | | | | | |
|---|--|--|--|---|
| <ul style="list-style-type: none"> - R&D Ops Spt - S&T - Test/Eval - Labs - etc. | <ul style="list-style-type: none"> - FDT/SDT - Mgt HQ Log - Vehicles - AMARC - SMBA - DMBA - etc. | <ul style="list-style-type: none"> - BII - WMCCS - GCCS - COMSEC - ATCALs - etc. | <ul style="list-style-type: none"> - BRAC - MFH - RPM/RPS - Environmental - ABP - etc. | <ul style="list-style-type: none"> - JPATS - UPT/UNT/UST - Formal Trng - Recruit Act - PME - etc. |
|---|--|--|--|---|

Crosscutting

- | | | | | |
|---|--|---|---|--|
| <ul style="list-style-type: none"> - Avionics - CIP - etc. | <ul style="list-style-type: none"> - DLRs - DPEM - AV POL - Supplies - etc. | <ul style="list-style-type: none"> - Base Comm - Visual Info - E & I - INFOSEC - Airborne Comm - etc. | <ul style="list-style-type: none"> - MILCON - BOS - etc. | <ul style="list-style-type: none"> - Family Centers - Child care - etc. |
|---|--|---|---|--|

Figure C-4
[Mission Support Panels]

| MAJOR COMMAND | REPORTS TO HQ USAF FROM |
|--|--|
| Air Combat Command (ACC) | <ul style="list-style-type: none"> - US Central Command - US Atlantic Command - North American Aerospace Command - US Southern Command |
| Space Command | <ul style="list-style-type: none"> - US Space Command |
| US Air Forces in Europe | <ul style="list-style-type: none"> - European Command |
| Pacific Air Forces | <ul style="list-style-type: none"> - US Pacific Command |
| Air Mobility Command (AMC) | <ul style="list-style-type: none"> - US Transportation Command |
| Air Force Special Operations Command (AFSOC) | <ul style="list-style-type: none"> - Non-MFP-11 portion of the US Special Operations |

Table C-2.
MAJCOMs Responsible for Reporting to CINCs

The Air Force POM is submitted to OSD (even years) for review. If OSD has issues with any of the recommendations, it may request further information or other options and recommendations. Over the years, DoD's issue-paper cycle at the end of the programming phase has been used as the vehicle for resolving contentious issues regarding the POMs. Once these issues are decided, OSD publishes Program Decision Memoranda (PDM), and the AF POM is then reviewed and updated to reflect this PDM guidance.

During the budgeting phase of the PPBS cycle, the Air Force Budget Estimate Submission (BES) is refined by the Air Staff programming (AF/PE) and budgeting (SAF/FM) offices and submitted to OSD (in mid-September) for review. From this, the Program Budget Decisions (PBDs) are drafted and given to the Air Force Budget Review Group (BRG) for review. The SAF/FM forwards its response to OSD, and any Major Budget Issues (MBIs) are identified and discussed at the SECAF-SECDEF level. When finalized, OSD issues the final PBD and this then becomes part of the DoD section of the President's budget (PB) to Congress. HQ Air Force publishes the principal program documents after Air Force POM submission to OSD and again after the President's Budget (PB) has been resolved. Supplementary documents to principal Program Documents are controlled by the OPR and are published at the same time as its associated PD.

Key documents consulted during the Air Force Budgeting phase include:

- Budget Estimate Submission (BES)
 - Amended Budget Estimate Submission (ABES)
- Defense Management Report Decision (DMRD)
- Program Budget Decision (PBD)
- Major Budget Issue (MBI)
- President's Budget (PB)
 - Books
- PB-33b, RDT&E Descriptive Summary
- RDT&E Project Listings
- Future Years Defense Program (FYDP)

C.2 THE IMPACT OF POST COLD WAR EVENTS ON AIR FORCE SIZING AND SHAPING

During the Cold War period, the Air Force had planned to meet most contingencies with its active forces. Only during a global war would the reserve component be brought into the fighting force, hence the term - forces in reserve. During the late 1980's, the Air Force contained just over 38 fighter wing equivalents, of which one-third were in the reserves. These reserve units were mostly intended for use only if a major NATO-Warsaw Pact war broke out in Europe. Lesser contingencies were to be handled by the active forces. Yet, USAF RC forces played a larger role in U.S. strategy for a global military conflict than did those of the other services. USAF RC wings could be deployed overseas quickly, and they had a reputation of competence in their specialized missions. Hence, USAF forces were the reserve component's main contributors to U.S. military strategy.

In 1986, the Air Force hit a post-Vietnam War peak of 608,000 airmen. By the end of 1995, the Air Force end-strength has been reduced by 34% to slightly more than 400,000. FY 1997 will find the Air Force at its mandated BUR end-strength of 385,000 active airmen. With these wide and deep cuts to the structure, the Air Force has come to rely heavily upon its reserve component for accomplishing a number of major missions (e.g., airlift, air-refueling, CONUS air defense, bomber missions, etc.). The next section will explore the influences at work in re-shaping the U.S. Air Force structure in the post-Cold War era.

C.2.1 The Impact of the Base Force on Air Force Sizing and Shaping

In 1990, DoD implemented the new Base Force concept and directed the Air Force to reduce its force from 38 fighter wing equivalents (FWES) to 26 FWES (15 active FWES and 11 reserve FWES) by 1995. General Michael Dugan, then Air Force Chief of Staff, endorsed the Base Force Concept and its ramifications for the Air Force. He believed that it represented a sound basis for public discussion even if it was not fully funded and ultimately accepted. His concern was that with the anticipated budget cuts, the Air Force might not be able to provide the reserve support to sustain the number of tactical fighter wings in the POM or the Base Force.

The Clinton Administration in early 1993 decided to make an additional 10-15% cut in the Base Force. It cited two reasons: the need for lower defense spending, and the ability of a somewhat smaller posture to perform the Base Force's job. Thus, the new administration did not reduce American commitments and interests, but rather decided to pursue a similar strategy with a somewhat smaller force. As a result, it decided to retain a large overseas presence in Europe, while configuring the U.S. posture to fight two nearly concurrent MRCs in the Persian Gulf and Korea. It called for a joint defense posture capable of meeting this strategic requirement, with the guidelines of a somewhat smaller DoD budget than funded by the Bush Administration.

C.2.2 The Impact of the BUR on Air Force Sizing and Shaping

The 1993 Bottom-Up Review thus was a downward refinement of the Powell-Cheney Base Force concept, not a wholesale departure from it. The BUR also represented a transition from generic planning based on two MRCs. In an important departure, the BUR mandated creation of two MRC "building block" postures, each composed of 4-5 Army divisions, 1-2 MEFs, 4-5 CVBGs, 10 USAF wings, and up to 100 strategic bombers: one "building block" posture per MRC. The effect was to give the Air Force a major role in MRC war-fighting, but as part of a joint team. The BUR calculated that two of these building blocks would provide a force of sufficient overall adequacy not only to fight two concurrent MRCs, but also to carry out a host of smaller operations: e.g., LRCs, peacekeeping, and small crisis interventions. Interestingly, the BUR called for enough active Army and Navy forces to meet this requirement, but envisioned the use of USAF RC wings to meet air power wartime requirements. The effect was to draw USAF reserve units more heavily into U.S. war-fighting strategy than previously had been the case. As before, the RC posture provided about one-third of USAFs combat formations, but they were now given more important roles than before, and more was expected of them.

Outside observers often accused the BUR of being biased in favor of air power, yet ironically, the BUR pared away fully six USAF fighter wings, while reducing the Army by only two divisions. The result was a somewhat smaller Air Force than might otherwise have been the case. Accordingly, the BUR mandated an Air Force reduction to 20 FEES (13 active FEES and 7 reserve FEES): enough airpower for the two building blocks, and no more. Although the BUR made substantial cuts to the USAF reserve component posture, at the same time it increased its mission responsibilities significantly. The BUR had, in essence, pushed the Air Force reserve component into playing a far greater role in U.S. defense strategy than had previously been the case. Partly owing to the new Clinton-Aspin adoption of a military strategy that depended less on forward presence, and more on power projection capabilities, the Air Force was accorded a larger-than-normal role in fighting the two MRCs (Persian Gulf and Korean theaters). Moreover, USAFs performance in the 1991 Gulf war coupled with the expected emergence of new technologies allowing for lethal deep fires further enhanced the Clinton Administration's reliance on airpower to carry a heavy share of the war-fighting load. However, there were now insufficient active wings to meet this requirement. The Air Force was expected to use the reserve component to make up the difference.

The BUR's planning requirements established forward presence guidelines in retaining approximately 1.5 USAF fighter wings in Asia, 2.3 wings in Europe, and a small force in the Persian Gulf. This left 7-8 Active and 7 RC fighter wing equivalents in CONUS. In order to provide the 10 fighter wing equivalents deemed necessary by the BUR to win one MRC, the Air Force does not rely on its reserve forces to simply fill-in the gaps of a reduced active component, but instead expects a melding of the active and reserve components into one single ready fighting force. The effect is to entrust USAF RC forces with major responsibilities and demanding missions.

As was the case during the Cold War, USAF RC forces remain an attractive investment owing to their low costs, modest manpower requirements, high state of readiness, and quick deployability. As a result, they tend to receive more consistent funding than do Army RC units, especially National Guard support and noncombatant forces that are unlikely to be called-up for anything short of a national emergency.

The BUR mandated that a number of missions traditionally accomplished by the active component be handed off to the reserves in an attempt to further reduce costs. The mission types that were found suitable for Air Force reserve forces fell into four categories:

- Missions that require a high surge activity in wartime but have a comparatively low activity in peacetime (e.g., transportation (airlift), aerial refueling, CONUS air defense, logistics).
- Missions that handle the more non-traditional aspects of military operations or, OOTW (e.g., peacekeeping/peace enforcement, nation-building, humanitarian and disaster relief, search & rescue, emergency evacuation/airlift).
- Missions that temporarily relieve the personnel/operating tempo of the active component in accomplishment of their peacetime duties (e.g., overseas presence responsibilities in Southwest Asia and TDY replacement for active duty Air Mobility Command (AMC) units).

- Combat and combat support missions of short-term duration lasting weeks to months (e.g., enemy air defense suppression and strategic bombing missions).

Listed below, as a function of component category, are missions that were either transferred entirely from the active component to the reserve component, or given in greater degrees to the reserve component:

C.2.2.1 Air Force Reserve.

Assumes conventional bombing missions. B-52Hs will be transferred and equipped with conventional "smart" munitions directed against enemy forces and fixed targets.

Air National Guard

- Assumes all Air Defense missions in the U.S. to include issues described in paragraph C2. The intended effect of transferring this mission to the ANG was to reduce the total number of interceptor squadrons and aircraft, due to the non-existent Soviet threat by long-range bombers. B-1 bombers would be transferred to ANG and conventional bombing missions would be assumed. The savings gained by transferring this mission to the Guard will provide funding for the conventional upgrade. Increased participation with F-15, F-16, and A-10 aircraft. Assist in providing forward presence in Southwest Asia.

- Added a space mission with the standup of a survivable missile warning squadron.

Air Force Reserve and Air National Guard

- Increase in aerial-refueling/airlift operations. Intended to support TRANSCOM (AMC) daily and in the opening surge of contingencies.
- Increase in tanker/refueling missions.
- Increase in strategic airlift missions.
- Short duration peacetime deployments overseas to relieve active forces.
- Addition of the AWACs mission through an associate unit at Tinker AFB.

C.2.3 The Impact of the Mobility Requirements Study on Air Force Sizing and Shaping

The Mobility Requirements Study/BUR Update analysis recently completed reveals that one of the Air Force's fears were indeed founded: That the Air Force does not have-and will not have in the future - enough strategic airlift to take care of two nearly simultaneous MRCs. Although sealift is responsible for shipping most tonnage to the Persian Gulf and Korea, airlift is responsible for meeting early, time-urgent requirements: e.g., USAF materiel and deployment of Army light forces. Analysis suggests a significant short-fall in airlift for this purpose. This capability is crucial in halting an aggression in a second conflict while the first is underway. What is clear is that there is a need for enhancements to strategic mobility.

Whether USAF's strategic lift force will be enlarged significantly beyond the present posture is less clear. DoD's main emphasis today is on bolstering sealift and overseas prepositioning, while keeping airlift constant.

The original rationale for a sizable USAF airlift force came in the 1970s, when the need to meet the 10-Day goal for reinforcing NATO in Europe confirmed the need for about 75 C-5's and 240 C-141's. In the early 1980's, this plan was reconfigured to call for prompt reinforcement of both NATO and the Persian Gulf within a single month. The effect was to elevate airlift requirements, thus setting in motion plans to acquire the C-17, KC-10, and other aircraft. The aging of the C-141 and C-5 fleets further exacerbated the need for more aircraft: including wide-bodied aircraft capable of hauling heavy and bulky cargoes. The BUR's adoption of the 2-MRC framework preserves this requirement. The extent of the requirement depends heavily upon not only reinforcement goals in each theater, but also upon the degree of simultaneity expected. Currently, DoD's assumptions do not envision complete simultaneity, but they do anticipate that the two regional wars will start within a few weeks of each other. The effect is to call for a somewhat larger airlift force than available now. The constraining factors are that the FYDP typically allocates only a modest portion of the DoD budget to strategic airlift, and that in today's setting, procurement funds are limited: they account for only 18% of the DoD budget. The current requirement as specified by DoD is to lift about 50 million ton-miles per day. This capability is expected to stay relatively constant for the coming years. The airlift mission thus will remain roughly constant, and USAF RC units will play a major role in carrying it out.

C.2.4 The Impact of the CORM on Air Force Sizing and Shaping

The CORM was a congressionally mandated independent review that sought to reexamine whether cost-effective reallocations of responsibilities and resources were required to make the military operate more efficiently as well as effectively. It responded to Congressional concerns that the 1948 Key West agreements are no longer valid, and that owing to overlapping roles and missions, the services have required redundant capabilities: e.g., four air forces and two armies. The CORM thus went looking for wasteful duplication among the Services.

It concluded that the Key West agreements are no longer valid: that the chief challenge today is for the services to provide the military capabilities needed by CINCs to carry out their missions, most of which require joint operations. As a result, the CORM placed increased emphasis on jointness. Yet it rejected the allegation of redundancy. Instead, it found that a high degree of overlap is a positive feature because it encourages joint operations and helps foster a healthy competition among the services.

Redundancy can be the case, it said, only if the BUR posture is demonstrably too large for its missions: something that the CORM did not find to be the case. The CORM urged the services to concentrate on core competencies and found a few narrow operational areas where mission consolidation could take place, but it argued for no wholesale changes in the service postures and mission profiles. It called for a USAF posture capable of performing its traditional combat missions, and in arguing for maximum reliance on inexpensive RC formations, it spotlighted the role of USAF RC forces.

Where the CORM called for major consolidations is in the domestic military infrastructure: e.g., social services, RDT&E support, education & training, property maintenance, health services, base maintenance, depot maintenance, installation services, product manufacturing, construction, central logistics support, and other functions. The CORM called for increased use of commercial assets and reliance on competitive market mechanisms to reduce costs in these areas. Over the long term, changes in these areas could have a modest impact on USAF RC requirements.

[End of SAIC's Appendix C on the Air Force Sizing and Shaping Process]

CLOSING REMARKS

Today I'll talk about some of the details, some of the membership on this first team - the Air Force team. I will tell you, from my experience over the past 31 years, that the Air Force is made up of a mosaic of people with a variety of skills, functions and capabilities. . . But the fact of the matter is that this is an Air Force of active duty, Guard, Reserve and civilians that has a reservoir of expertise that we rely upon daily. No one group is any more or less important than the other.

General Ronald R. Fogleman, USAF Chief of Staff, prepared remarks to the American Defense Preparedness Association, 2 Feb 1995⁷³

As the Air Force looks forward into the future of the next millennium, it is faced with the challenge of serving the American people and providing for the defense of the United States under the pressures of smaller budgets, and an increased tempo of worldwide operations. In this environment of reduced military budgets with more work to do, it only makes sense, to better utilize the resources of the Guard and Reserve . . . To better utilize the human potential of committed professionals who want to serve their country. In the future, the Air Force will rely even more heavily on the role of the Guard and Reserve as part of the Air Force team. **The Air Force should be organized to make full, effective, and coordinated use of its total force.**⁷⁴

However, the bottom line of the SAIC study, *Sizing and Shaping the DOD Total Force*, states: Currently, the Services are sizing and shaping their forces effectively within the overall Department of Defense guidance. However, additional focus and overall guidance may be required as the active component/reserve component integration process is refined. The Total Force Policy is not adequately defined or understood; nor does it provide sufficient guidance to the Service's force structuring community.⁷⁵

One potential tool to provide policy makers with a better definition and understanding of Total Force Policy is the concept of coproduction. This is what will be examined in Section Two: *Application of Coproduction Concepts to "Sizing and Shaping" the Total Force*. Coproduction concepts may be used to assist the Air Force in its organization **to make full, effective, and coordinated use of its total force**. This is what will be examined in Section Three: *Assessing the "Fit" of Coproduction Theory to the USAF*.

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Section

Two

**Application of Coproduction
to
“Sizing and Shaping”
the
Total Force**

Application of Coproduction Concepts to "Sizing and Shaping" the Total Force

THE PRIMARY PURPOSE OF THE RESEARCH

The purpose of this research is to help the decision maker better understand the basic tenets of the Total Force Policy. No one has adequately defined these tenets nor have they been dissected into their component parts as a basis for policy formulation or implementation.¹ In fact, as it now stands, the tenet of "sizing and shaping" the Total Force means different things to different decision makers and is often used in a political substantiation of bureaucratic goals. If this research were able to provide a normative definition of the "sizing and shaping" tenet and break it down into its component elements, then it may provide the basis for a better understanding of the Total Force Policy. Consequently, it may provide the decision maker a greater degree of practical insight into total force policy making than is now available in its more political form.

Therefore, the primary purpose of this research is to propose that coproduction theory may provide a more adequate definition and a better understanding of the Total Force Policy.

ANOTHER PURPOSE OF THIS RESEARCH

A primary motivation for this section on coproduction is to suggest that "social science" theory can provide a useful addition for the decision maker to better understand the two major tenets of the Total Force Policy - "sizing and shaping"² and "seamless integration"³ of the Total Force. Emphasis will be placed on the tenet of "sizing and shaping" the Total Force, but the same concepts of coproduction may also provide valuable insight into "seamless integration." By bringing together present-day theory on coproduction, a systematic picture of the important elements of "sizing and shaping" the Total Force emerges. Another purpose of this research is to channel these observations into a comparative coproduction framework to assist the policy maker in the future sizing and shaping of the Total Force.

Therefore, another purpose of this research is to propose that coproduction theory may provide better guidance to the Service's force structuring community.

THE FINAL PURPOSE OF THIS RESEARCH

The comparative coproduction framework uses Reserve Component participation as the key element to define the RC and AC relationship. The Reserve Component participation is contrasted and compared with four types of production; *parallel coproduction*, *ancillary coproduction*, *joint coproduction*, and *independent production* to provide a taxonomy for assessing the Active and Reserve Component mix in the Total Force. Potentially, this "logic" could be developed from its normative roots into an empirical model for the future sizing and shaping of the Total Force based on the greatest capability for the least cost. This concept of using coproduction theory as a valuable tool for understanding and implementing the "size and shape" of the Total Force may be combined with the insights from Section One about the Total Force Policy within the National Security Strategy environment.

Therefore, the final purpose of this research is to propose that coproduction concepts may be used to assist the policy maker in the sizing and shaping of the Total Force to meet the military requirements of the National Security Strategy.

A PURPOSE DELAYED

This observation is not intended to imply that coproduction theory is not a valuable tool for understanding the "seamless integration" dimension of Total Force. In fact, it is this direct relationship where coproduction theory descriptively describes the process of citizen participation, which validates the use of coproduction theory in studying the "sizing and shaping" dimension of the Total Force Policy. While aspects of the "seamless integration" dimension of coproduction theory will be touched upon in the review of the literature, and in the development of the comparative coproduction model, regrettably, it is

not the purpose of this research to develop this relationship any further. It is hoped that "seamless integration" will be studied in a future companion study.

WHAT IS COPRODUCTION

It is important to understand what is meant by coproduction. Why does coproduction theory exist? It is a social science concept used to explain the added benefit to society when citizens and government officials work together. Many researchers would answer this question by referring to the work of Gordon Witaker, Elaine Sharp, Jeffrey Brudney and Robert England, Richard Rich, Wesley Bjur and a few others, which argues that coproduction is a special category of active citizen participation where citizens collaborate with existing governmental agencies to enhance governmental capability. The term "citizen participation,"⁴ which encompasses the common idea of "volunteerism,"⁵ is a critical element in defining the coproduction relationship between how the government operates and how the services are produced. Different authors place different emphasis on the interaction between the government and citizen participation relationship. This has resulted in disagreement in the literature over the range of activities covered by the concept of coproduction and the nature of the relationship needed between citizens and the service agencies to exemplify coproduction. However, most would agree that another important element to coproduction theory is the "production" of service goods.⁶ This idea explicitly views coproduction as an economic activity where coproduction can lead to cost reductions through greater efficiencies in the production of services, enhance the level of quality, and expand citizen participation in service decisions, resulting in greater satisfaction and support for public policy.⁷ Larry Kiser and Stephen Percy define coproduction as the production of services through the mixing of "regular producers" with "consumer producers."⁸ The term "regular producers" refers to the normal exchange process between producers and consumers while the term "consumer producers" refers to citizen involvement outside one's normal role as consumer to participate in the production process of the service in order to consume its output.⁹ Others, such as James Ferris, Karen Harlow, Roger Parks, Mark Rosentraub, Robert Warren, and Rick Wilson have evolved this economic dimension of coproduction to

the perspective where coproduction may provide the mechanism for policy makers to allocate resources for improving or increasing public services during periods of limited resources and tight budgets. Ferris evolves the coproduction concept even further to suggest the specialized concept of coprovision of services. Coprovision occurs when the service outcome requires the extra production provided by coproduction to successfully accomplish the service.¹⁰

THE NATURE OF COPRODUCTION

Basically, the government, given its fiscal constraints, has asked its citizens to pitch in and help with the production and delivery of services.¹¹ The potential of using coproduction as a tool for examining "sizing and shaping" the Total Force requires a review of the literature to develop a definition of coproduction and the types of activities considered coproductive in nature that are applicable to the relationship between the Active and Reserve Components. From this redefined concept of coproduction a comparative framework may be developed to contrast the different forms of production with different types of reserve participation. The framework may be used to compare and contrast Reserve contributions with Active contributions toward National Defense to examine the financial impact of different RC and AC mixes. Finally, an USAF Institutional Coproduction Process may be developed to provide the conceptual model of how to implement the coproduction process. It may be used by decision makers to institutionalize the benefits which coproduction may have on the sizing and shaping of the Total Force of the future.

ACTIVE VS PASSIVE PARTICIPATION

Gordon Whitaker has developed the term "citizen participation" to identify coproducers of public services:

Citizen participation is commonly viewed as attempts to influence the formulation of public policy. In this paper (Coproduction: Citizen Participation in Service Delivery), the author (Gordon Whitaker) argues that citizens also can and do exert important influences on policy through their

participation in the execution of public programs. This is particularly the case in human services where change in the client's behavior is the "product" which is supposed to be delivered. Citizens "coproduce" public services by requesting assistance from service agents in carrying out agency programs, and by negotiating with service agents to redirect agents' activities. Citizen participation in service delivery is, in fact, often critical to program success.¹²

He identifies three broad types of activities which constituted coproduction. The first are citizens requesting assistance from public agents, where service activities are accomplished only in response to specific requests from its citizens.¹³ An example would be the call up of the National Guard by a State Governor to help with the disaster relief connected to a national disaster such as a flood or hurricane. The second are citizens providing assistance to public agents, where the goal of citizen cooperation in public programs is the transformation of citizen behavior.¹⁴ This cooperation is voluntary where the citizen can participate directly such as when a citizen joins the Air Force Reserve; or, indirectly, such as the widespread citizen support of World War II with the purchase of war bonds to help finance the war. The third describes citizens and agents interacting to adjust each other's service expectations and actions where a reciprocal interaction between the "professional" service agents and the service recipient is based on engaging in mutual adjustment of expectations and actions.¹⁵ While mutual adjustment is not feasible in all service delivery situations, citizen participation in the reciprocal transformation process is a means for making services more effective and meaningful to the citizen.¹⁶ Whitaker believes an essential element needed to coproduce services is the active involvement of the general public in the production of services.

HARD VS SOFT SERVICES

Jeffrey Brudney and Robert England would refer to Whitaker's idea that citizen participation is involved in the production and delivery of service in terms of "soft" and "hard" services.¹⁷ "Soft" or human services require greater citizen participation to accomplish their societal benefits and rely more on the reciprocal transformational process to be successful. For example education and health care are

examples of "soft" services.¹⁸ "Hard" services, with the classical examples of police and fire protection, rely less on citizen participation, however, citizen participation contributions are also essential to the successful delivery of these "hard" services.¹⁹ While Whitaker emphasizes the transformation of citizen behavior as a service objective of police interaction with the community,²⁰ Brudney and England highlight the more basic need for direct citizen participation. They note that Detroit Mayor Coleman Young, out of fiscal constraints, increased the Detroit Police Reserve and Fire Department Auxiliary to provide the "extra hands" needed to augment service delivery because of fiscally mandated cuts in police officers and to provide the extra help needed during emergencies.²¹ Whether "hard" or "soft" in its broadest context "coproduction affects the redistribution of goods and services in society, thereby affecting the types of policies which public agents implement."²²

"DOMINANT MODEL" AND THE COPRODUCTION CONCEPT

Implicit in the success of the augmentation of the "hard" services by citizen participant volunteers, is the acceptance of the coproduction concept by the "professional" service agents. Elaine Sharp emphasizes that professional service agents who hold the dominant model perspective may balk at sharing their "turf" with citizen volunteers until they adopt a more coproductive approach.²³ Even if not concerned about job security, the service agent may be threatened by the citizen volunteers disruption of their organizational procedures, and, or they may perceive a weakening of their legitimate professional autonomy.²⁴ In an effort to improve services and public sector accountability, Sharp compares the dominant model -- "a model that ignores significant aspects of citizenship and therefore diverts attention from some potentially important means of improving urban service delivery and citizen participation"²⁵ -- with the coproduction concept.

The dominant model is characterized by three assumptions made by the service agent of his role and the citizen's role in the delivery service process:

- the "official performance" assumption: urban officials are seen as responsible for "performing," i.e., programs and services are engineered by them and "delivered" to the public;

- the "citizen as judge" assumption: the role of the citizen involves making demands upon government, consuming (using) government services, and providing evaluative feedback on the performance of urban officialdom;
- the accountability = effectiveness + communications assumption: accountability is viewed as the ability of government to perform effectively, i.e., to deliver services as demanded; accountability also requires that citizens have adequate information on the state of service delivery, and officials must be receptive to evaluative feedback from citizens.²⁶

Citizen involvement is perceived as consuming public goods where they contribute to the delivery process by making demands upon the government.²⁷ Effective government performance and accountability are linked to the service agent's responsiveness of services to meet the citizenry demand within budgetary constraints.²⁸ This creates a distinctive "professional" autonomous service delivery system that "performs" to the citizen's role of demanding, consuming, and evaluating services.²⁹ The "professional" service delivery system has trouble acknowledging the potential of citizen involvement as a participant in the service delivery process³⁰.

In direct comparison with the assumptions of the dominant model, the coproduction concept proposes the following three assumptions:

- the "conjoint responsibility assumption - urban services are created through the interaction of citizen behaviors and the activities of public officials, and both contribute to the resulting quality of urban services;
- the citizen as evaluator and student of public affairs assumption - the role of the citizen is not only to assert demands/preferences and judge how well they are met, but also to learn about factors affecting service delivery, and to develop competencies that contribute to service delivery goals;
- the "accountability as performance and investment" assumption - public officials are responsible for service delivery that is effective because it is based upon an investment in the development of citizens as resources, i.e., the attempt to be effective without citizen contributions, or even in spite of citizen contributions that are not adequate.³¹

Coproduction is the joint product of the activities necessary to "perform" service delivery of both government agents and citizens.³² Service delivery is a joint venture between them with shared responsibility for productivity improvement (as contrasted with the dominant model where the

government perceives it bears total responsibility).³³ To be successful, citizen coproduction activities require government agent encouragement, and assistance, and support of citizen participation upon service delivery.³⁴

Sharp identifies three different types of citizen activity. First, are overt volunteer activities where citizen participation directly assists service agents in the performance of their duties.³⁵ Similar to Witaker's coproduction activity of citizens providing assistance to public agents, the previous example of direct participation of a citizen participating in the Air Force Reserve is a traditional illustration of a volunteer activity. Second, are self-help activities undertaken by citizen participation with assistance provided by the service agents seeking to bring about personal changes in citizen behavior.³⁶ Largely a part of the human service delivery responsibility of the government, an example would be a drug rehabilitation program designed to help a drug abuser stop abusing drugs. Conceptually, self-help activities can be considered as a sub-set of Witaker's coproduction activity of reciprocal interaction between the service agent and citizen recipient based on a relationship of mutual adjustment of expectations and actions. Lastly, are activities where citizen participation contributes to "service conditions."³⁷ The amount of citizen participation creates the "service condition" for the efficiency of the service delivery process. An example is the use of zip codes by citizens which allows faster and more efficient mail delivery

As Sharpe states "(b)y focusing on citizen contributions to service delivery, the (coproduction) model provides a definition of citizen participation that goes beyond conflict over decisions, offers potential for cooperative linkages between citizens and urban service bureaucrats, and highlights the value of many everyday, commonplace, yet important citizen activities."³⁸ However, the primacy of the dominant model should not be substituted by coproduction concepts, instead integration of citizen participation activities into the service delivery system should be sought as a means of using previously unrecognized resources to make service delivery easier³⁹.

"CRITICAL MIX" OF CITIZEN PARTICIPATION

Many helpful ideas have flowed from this comparison between the dominant model and the coproduction concept. Jeffrey Brudney and Robert England have developed the concept of coproduction as the "critical mix" of the cooperative relationship between citizen participation and the government in the joint production of services.⁴⁰ Using Kiser and Percy's economic perspective, they incorporate the concepts of "regular producers" and "consumer producers" into the dominant model of service delivery.⁴¹ Service delivery can be conceptualized as the interaction between the distinct groups of regular producers, the bureaucracy with its service agents, and the consumers, the citizens.⁴² Figure 2.1 shows the dominant model perspective where the regular producers of service agents allocate resources and services to consuming citizens and constituencies. New demands, adequacy of service, and response to service delivery are provided through a feedback loop.

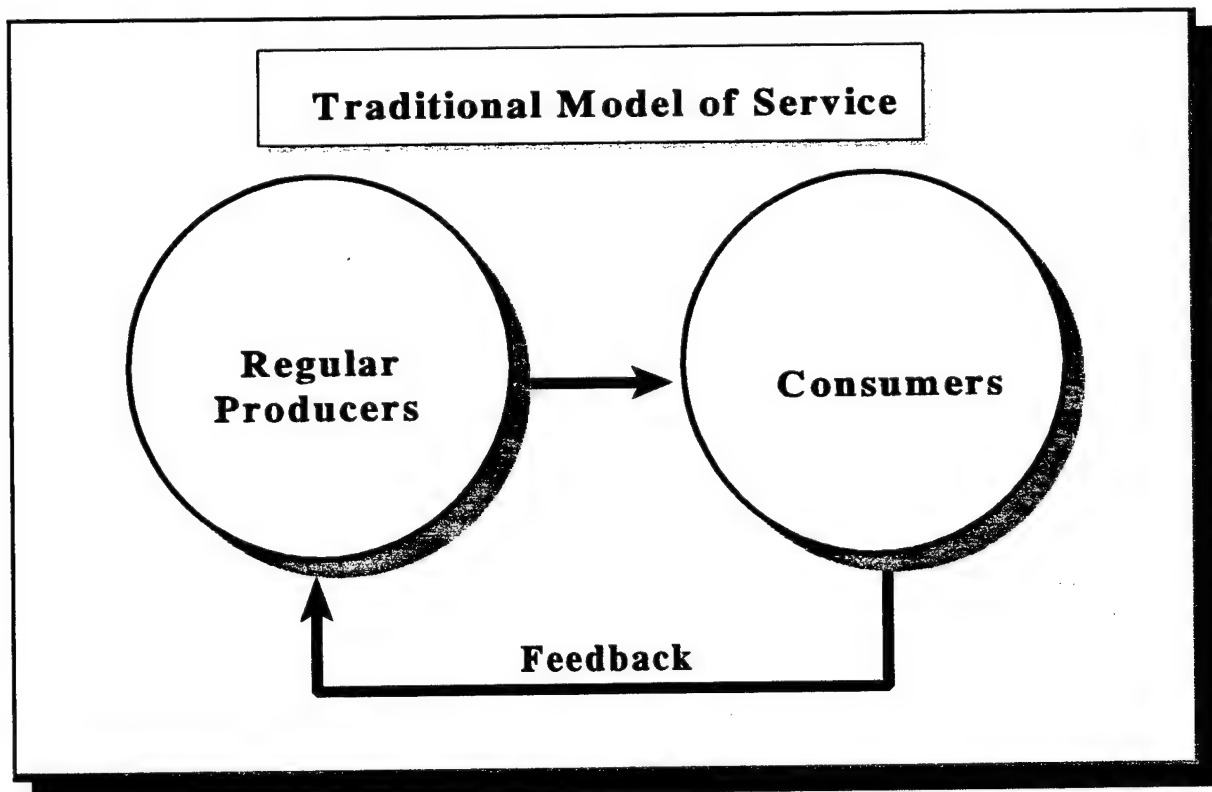


Figure 2.1
Traditional Model of Service Delivery⁴³

Figure 2.2 displays the coproduction process as the critical mix between regular producers and consumers. Consumer behavior is transformed by their active citizen participation in the service delivery process (the part of the consumer area that overlaps the regular production area) into coproducing consumer producers. Feedback is internal between participants in the service delivery process.

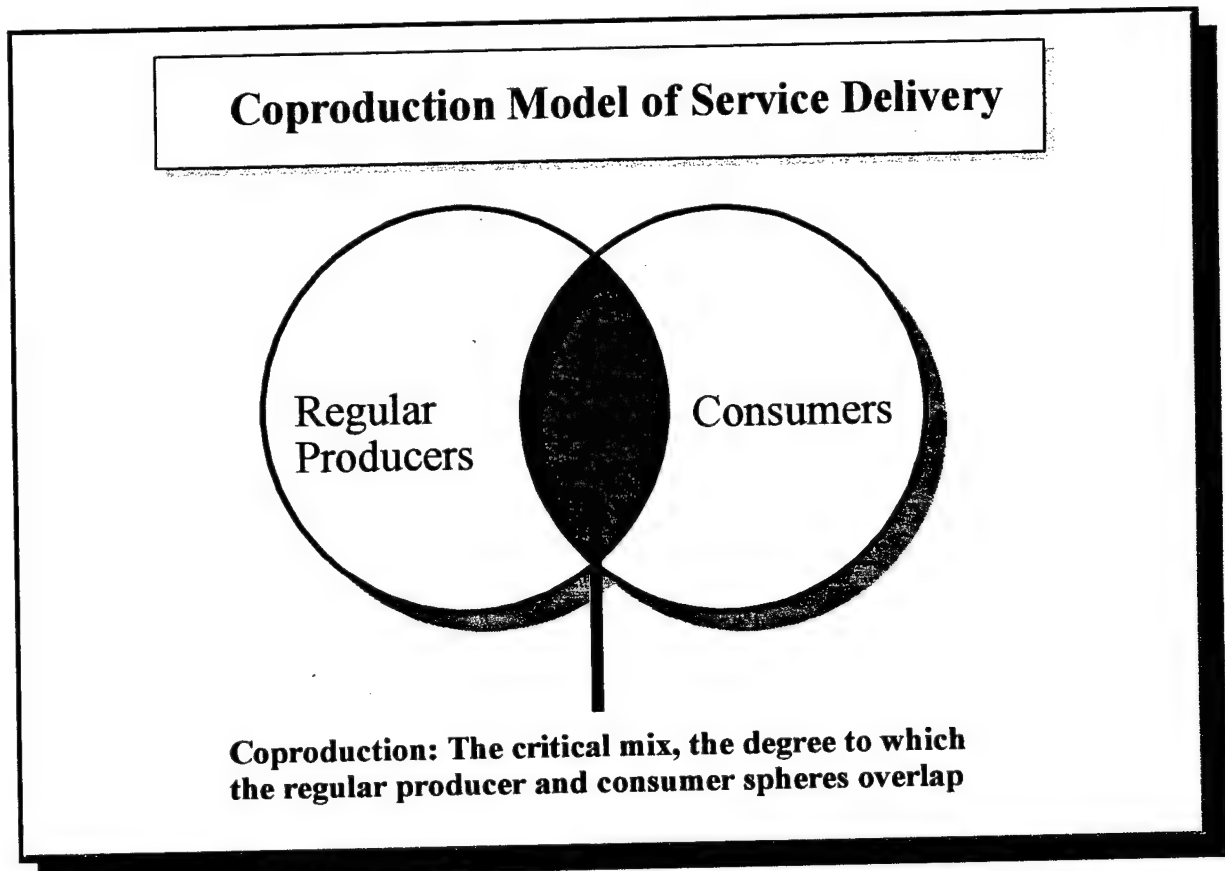


Figure 2.2
Coproduction Model of Service Delivery⁴⁴

Citizen participation, regular producers, and consumer producers are therefore three distinct, yet interrelated parts of the coproduction concept which may be present in differing degrees in the coproduction service delivery process. Brudney and England have provided a coproduction model to examine this interrelationship in the development of the specific conditions of the relationship. This

concept is particularly important in understanding the specific conditions of the Active and Reserve Component relationship in a usable definition of coproduction.

POSITIVE VS NEGATIVE & ACTIVE VS PASSIVE COPRODUCTION

Richard Rich has developed a typology of specific categories of coproduction activity. Broad in its interpretation of coproduction concepts, his compilation of coproduction examples establish a format to help understand the coproduction of municipal services. He measures the outcome of coproduction activity as being either "positive" or "negative" in impact on the community.⁴⁵ Citizen participation could either be "active" or "passive" in working with the service agent, where the citizen could interact either individually or collectively as part of a group.⁴⁶

MATRIX OF COPRODUCTION EXAMPLES

| Impact on Community Conditions | Type of Activity | | |
|--|---|--|---|
| | PASSIVE | ACTIVE | |
| | | INDIVIDUAL | COLLECTIVE |
| N E G A T I V E | Failure to report crimes, remove fire hazards, place trash out in appropriate fashion, or lock one's door | Turning in false alarms, littering, vandalizing public property, abandoning autos | Unregulated street parties, youth gangs |
| P O S I T I V E | Refraining from littering, defacing public property or parking autos in snow removal lanes | Taking home security measures, working in a social service agency, trimming shrubs and trees so they do not block street signs | Creating neighborhood watch organizations, arranging after school recreational programs for delinquency prone youths, organizing day care centers or mini-transit systems |

(Emphasis added by author)

Figure 2.3
Matrix of Coproduction Examples⁴⁷

While Rich views coproduction in a broad context, Brudney and England, using their "critical mix," seek to develop the specific conditions for coproduction activity. They argue that coproduction is defined by the degree of overlap between producers and consumers.⁴⁸ The overlap is characterized by citizen participation or involvement, and, thereby seeks to be active (not passive) in nature.⁴⁹ The purpose of coproduction is usually to produce a positive (not a negative) impact on a service delivery system.⁵⁰ If coproduction is the critical mix between regular producers and consumers, and, if the regular producer is represented by the United States Air Force and the consumer is represented in the overlap by the citizen-soldier of the Air Force Reserve and the Air National Guard, then coproduction of National Defense should stem from the active participation of reservists with their positive impact on National Defense.

DIRECT VS INDIRECT PARTICIPATION

The same argument also applies to Wesley Bjur's "direct" and "indirect" coproduction categories of volunteer performance in dealing with the work of government. Wesley Bjur stated "direct performance of government functions is when a person volunteers or contributes his/her effort to fulfill a function or service, and is not remunerated for that effort by government as employer."⁵¹ In contrast, "indirect performance involves helping or assisting government services by compliance, facilitation, doing one's part, etc."⁵² Both types of volunteerism are supportive of the five areas of governmental work; decision or rule making, resource allocation, planning, service delivery and social control.⁵³ He classifies the coproduction effort based on the relative importance of the citizen participation contribution to the shared production of work with the success of the service outcome.⁵⁴

- *Sin qua non* coproduction is where citizen participation is absolutely essential to the production and the success of the work.⁵⁵ For example, the Reserve Component provides one-half of the capability with one-quarter of the global missions for Air Mobility Command's strategic airlift mission.⁵⁶
- Optional coproduction is the contribution of citizen participation that is "optional" to the accomplishment of the work. However, if present, it enhances the quality or increases the quantity of the work with an improvement in the service.⁵⁷ For example Individual Mobilization

Augmentees of the Air Force Reserves work as scientific and engineering support on Space Research and Development Programs at Phillips Laboratory.⁵⁸

- "Frosting on the cake" coproduction is citizen participation to perform work that would probably not be done without the volunteer production of the service.⁵⁹ For example, Reserve officers recruit prospective high school candidates in the Air Force Academy Liaison Program for the United States Air Force Academy.⁶⁰

Conceptually, a spectrum of citizen participation shows the categories of work in relationship to the importance of the work to the government agency.

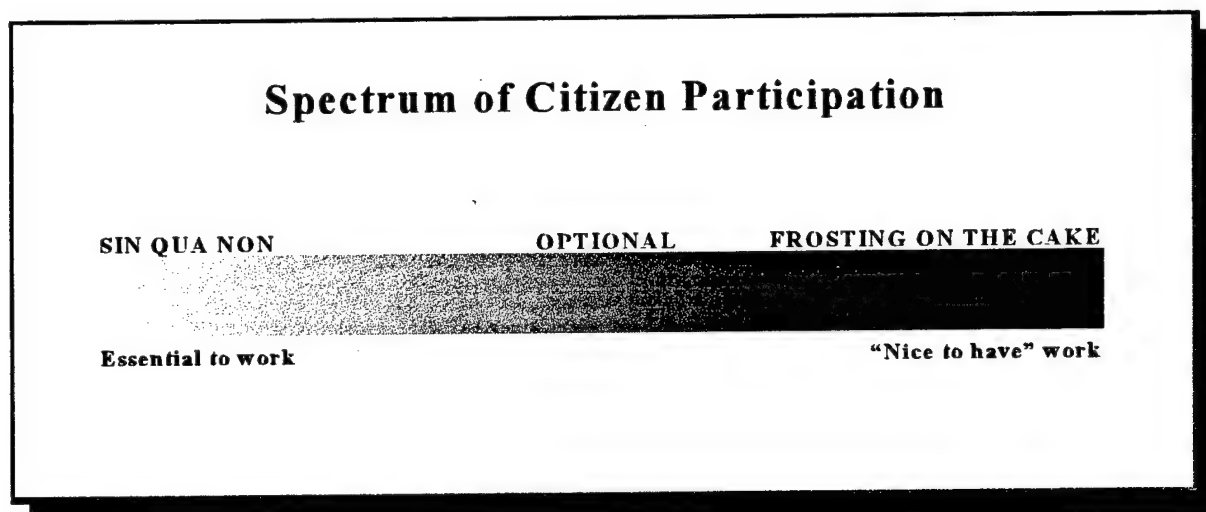


Figure 2.4
Spectrum of Citizen Participation⁶¹

Bjur has identified an important mechanism for looking at coproduction from the "direct" and "indirect" activity of volunteers. Whitaker, Sharpe, and Rich support the "indirect" perspective as being a valid part of the coproduction concept. Whitaker supports the "indirect" perspective with his discussion of compliant action by civilian participation as an important element of the service delivery system⁶². Sharp supports the "indirect" perspective where compliance of governmental regulations is an important element by which citizens set the service conditions for the government's delivery of services.⁶³ Many of Rich's "passive" citizen activities of dealing with service agents is dependent on the degree of compliance a citizen gives toward the service agent and service delivery.⁶⁴ However, using Brudney and

England's coproduction idea of determining the critical mix of usable coproduction attributes, the "indirect" activity of volunteers may be delimited from the working definition of coproduction in examining the relationship between the Active and Reserve components of the United States Air Force.

The critical mix of civilian participation is the degree of interaction between the regular producer of the United States Air Force and civilian consumers where citizen volunteers of reservists provide the "direct" civilian participation. It is this direct interaction between the citizen volunteers of reservists and the United States Air Force which provides the service delivery of National Defense. Conversely, "indirect" activity is largely missing from the direct production activity of the citizen volunteers of reservists, and, just as importantly, "indirect" activity is also missing from the civilian consumers in the larger overall context.

THE ISSUE OF PAY AND MOTIVATION

Wesley Bjur presents a working definition of coproduction. Following the work of Gilbert Siegel,⁶⁵ coproduction can be defined "as performing the work of government directly or indirectly by persons who are not employed by government to do that work."⁶⁶ This begs the question of what is the motivation of an individual to volunteer his labor without monetary compensation? Bjur initially answered that individuals and voluntary associates participate out of a motivation of enlightened self-interest.⁶⁷ He elaborates by using the social exchange theory of sociologist George Homans. Social exchange theory (based on the economic exchange theory premise of furthering ones self-interest in a market economy) is the relationship where individuals trade something of value, such as personal labor, to receive something in value, such as power, prestige, or wealth⁶⁸. Bjur has developed a motivational framework based on the type of exchange and the organizational forms of government described by Richard Rich in his article *Institutional Perquisites to Voluntary Participation in Municipal Service Delivery*.⁶⁹

| Bases for Participation as a Function of Structure and Type of Exchange | | | | | |
|--|--|---|---|----------------------------|---|
| Organized Form of Participation | | | | | |
| Type of Exchange | Municipal Corporation | Neighborhood Corporation | Home Owner's Association | Neighborhood Councils | Individuals |
| Power | Election or appointment. Criminal sanction enforcement | | | | |
| Prestige | | Voluntary participation | | Voluntary participation | Voluntary participation |
| Wealth | Direct taxing power | Taxing power derived from supporting governments | Taxing power mandated by deed & lease provisions | | Paid employment by supporting governments |

Figure 2.5
Bases for Participation as a Function of
Structure and Type of Exchange⁷⁰

Bjur identifies prestige as the primary motivation for coproduction volunteer activity. It is the attribute of prestige, where the individual has the perception that his or her participation will be acknowledged, recognized, and appreciated by his compatriots, community, and host governmental activity for which the individual will exchange his time, labor, and participation.⁷¹ However, it is possible for the motivation of prestige to degenerate into a personal motivation for political power especially when participation takes place in large communities or with large bureaucracies where members lose the sense of knowing one another.⁷² And, unfortunately, political power can be translated into wealth by the unscrupulous few.

Motivation for reservist participation include feelings of prestige, pride in serving in an elite organization (not everyone can serve) and patriotism. Reservists experience the challenges and rewards of working within a defined hierarchical system and get to experience the camaraderie the Air Force culture affords them. They also get to put into practice, skills and abilities they are trained in and often excel at, but may not be offered in the civilian community. It is easy to observe the non-tangible "prestige" rewards and recognition that Reservists derive from their participation in the Air Force.

Another point of view and basic assumption on the issue of pay and motivation is to delimit pay as a motivation for participation. Bjur, with his definition of coproduction describing "volunteer" as being non-employed (not paid) to do the governments work is a major constraint in using coproduction concepts to understand the Active and Reserve Component relationship. Air Force Reservists are paid for their civilian participation. The amount of pay varies from full employment of a member representing the Reserve Component on Active Duty to participation for only retirement points. Reserve retirement, payable at age 60, is dependent on a member earning a minimum of 50 retirement points a year for a minimum career of 20 years.⁷³ The part-time paid reservist gets one retirement point and one days active duty pay for each full day of active duty participation. He or she gets two retirement points and two days of active duty pay for a full eight hour Inactive Duty Training day of participation.⁷⁴ Other economic benefits include unlimited Base Exchange shopping privileges, 12 shopping visits to the Commissary per year, Space Available travel on military aircraft and use of Morale, Welfare, and Recreation facilities.⁷⁵ Upon retirement, the Reserve member gets the same retirement benefits as an individual who retired off of active duty. There is definitely a financial and monetary motivation for an individual to join and participate in the Reserve Component.

However, it is beyond the scope of this research to examine this critical motivation for participation in the Reserves. For the purposes of this research it is important to acknowledge the existence of a monetary motivation for participation, but this research concentrates on the "fit" of other coproduction concepts to the relationship between the Active and Reserve Components. Monetary

motivation for reserve participation should be examined as a topic for follow-on study to this research, and, explicitly be examined for how monetary motivation impacts coproduction participation.

COPRODUCTION REDEFINED . . . the "critical mix" to "size and shape" the Active and Reserve Component

Using a broad definition of volunteerism by delimiting the monetary motivation of participating in the reserves and by emphasizing the motivational attribute of prestige in citizen participation is necessary to produce a useful definition of coproduction. The issue is not that the interpretation of Bjur's definition of coproduction is valid or not valid, but, more importantly is it relevant to the specific environment where policy makers are engaged in making resource allocation decisions based on coproduction concepts. For this research, the issue is to better understand the interpretation and implementation of the Total Force Policy. It is hoped through the application of coproduction concepts, the "sizing and shaping" of the Total Force can be better operationalized in the actual delivery of services that compose national defense. So far, the review of literature has shown the "critical mix" of those coproduction attributes that define the Active Component and Reserve Component relationship to be the "voluntary" and "active" participation of reserve members in the performance of "hard" services to make a "positive" and "direct" contribution to the service delivery process. The Reservists' citizen participation takes place in the dominant bureaucracy of the United States Air Force, where the mix between regular producer and citizen producer-consumers has been relatively healthy and harmonious. However, in a search for greater fiscal efficiency, policy makers are striving to redefine the "critical mix" of the "size and shape" of the AC and RC mix.

POLICY MAKING AND RESOURCE ALLOCATION

A norm in defining important elements of coproduction has emphasized citizen participation in the production of governmental services (Whitaker, Sharp, Rich, and Bjur). A number of researchers have asserted that coproduction can benefit the service delivery process by fostering citizen involvement

in policy making; developing more active rather than passive forms of participation; and, by increasing production efficiency. The political concern for production efficiency of services has gained special importance in the governmental environment of balancing the budget, down-sizing the government, and extracting the peace dividend from the end of the cold war. Among the most common efforts to increase production efficiency is the reallocation of the costs of programs and services to obtain an efficiency of accomplishing more with less. Mark Rosentraub and Elaine Sharp note that coproduction is a production-oriented activity where:

- First, coproduction can lead to cost reductions through greater efficiencies in the production of services.
- Second, higher quality of service usually will result.
- Third, coproduction offers expanded opportunities for citizens to participate in decisions regarding urban services and this participation results both in greater satisfaction and in support for the public sector.⁷⁶

Building on this context, Robert Warren, Karen Harlow, and Mark Rosentraub have developed a framework of citizen participation in the production of services for studying the activities of citizens in their relationship to the production of urban services.⁷⁷ Using Roger Park's, *et al.*, economic based definition of coproduction – Coproduction involves the mixing of the productive efforts of regular and consumer producers⁷⁸ – they sought to delimit a concept of coproduction differentiating it from other forms of production. Examining citizen participation in the production of personal safety as related to the production of police services, they propose three types of production; ancillary production, parallel production, and coproduction:

- Ancillary Production involves those citizen activities, cooperation, and general acceptance of the norms, rules, and responsibilities for living with others as part of a community. Citizens involved in ancillary activities are exhibiting their social responsibility by cooperating with the government as a service provider. Concerning personal safety, examples of ancillary production behavior include reporting crimes, parents socializing children to obey laws, and drivers licensing their automobiles.
- Parallel Production involves those civilian activities undertaken by an individual or group to produce services in the private sector similar to services produced in the public sector, but

without contact with the governmental service agency. Citizens involved in parallel activities are acting independently of the government in trying to fulfill a need. Concerning the need for personal safety, some examples of the autonomous nature of parallel production include installing a home bugler alarm, buying a gun for family protection, and citizen patrols without any interaction with the police.

- Coproduction is then delimited to those citizen activities intended to augment and directly contribute to the production of services in conjoint behavior with the governmental agency. Citizens are involved in the conjoint cooperation with public agencies to undertake the production of services as a consumer producer of those services. Coproductive examples of working with a police department for increasing public safety include setting up a neighborhood "crime watch", a home bugler alarm monitored by a police station, and citizen patrols coordinated with the police.⁷⁹

Figure 2.6 illustrates this typology:

| A Typology of Citizens' Actions and Participation in the Production of Police Services | | |
|--|--|--|
| ◆ Ancillary production: Reporting crimes, reporting suspicious situations to police, socializing children to obey laws. | ◆ Parallel production: Purchase of guard dog, installing electronic alarm, hiring private security firm, citizen patrols. | ◆ Coproduction: Citizen patrols coordinated with police, establish block parents to protect school children with assistance of city agency, using city equipment to put identifying marks on personal property. |

Figure 2.6
A Typology of Citizens' Actions and participation
in the Production of Police Services⁸⁰

From a public policy making perspective, the results of distinguishing among ancillary production, parallel production, and coproduction allows more issues and resource allocation decisions to be studied than delimiting the definition to coproduction alone.⁸¹ These concepts have been commonly grouped in the literature as part of the coproduction concept, but, as broken out, can now better relate policy analysis to the distribution of service effects of coproduction within the governmental service delivery system.⁸² This typology allows for a more in-depth methodology in the study of personal safety

in a community with an examination of both the public and private dimensions of service delivery.⁸³

Mark Rosentraub and Robert Warren expand this typology through their research on the issue of coproduction as a management tool through the assessment of citizen participation in the production of urban services. Working from the three basic forms of citizen participation; ancillary production, parallel production and coproduction, they classify each form as passive, active, or competitive citizen action. Active or competitive activities are further broken into the categories of investment, i.e., it costs the citizen money; or, changed behavior, i.e., costs are non-monetary.

- Passive activities entail lone citizen participation without the interaction or involvement with other members of the community or service agents.
- Active activities entail individual or group participation with direct interaction and involvement with the community and the support and involvement of the service agents.
- Competitive activities entail citizen participation which can be directly perceived as competing with a service agents' operations.⁸⁴

Figure 2.7 illustrates this expanded typology used as part of an analysis on citizen involvement in the production of public safety:

| Support for Citizens' Actions and Crime Conditions* | | | | | |
|--|----------------------|----------|---------|---------|--------|
| Type of Activity | Crime Condition | | | | |
| | Crime Seriousness | Burglary | Robbery | Assault | Lights |
| Overall | | | | | |
| Ancillary | .21 | .18 | .20 | .21 | .14 |
| Parallel | .28 | .20 | .29 | .23 | NS |
| Coproduction | .20 | .17 | .18 | .19 | NS |
| Control | | | | | |
| Passive | .24 | .23 | .21 | .20 | .13 |
| Active | .22 | NS | .22 | .23 | NS |
| Competitive | NS | NS | .13 | NS | NS |
| Cost Change | | | | | |
| Behavior | .17 | .11 | .17 | .16 | NS |
| Investment | .27 | .17 | .28 | .24 | .14 |

*All rank-order correlations significant at .05 level or less; NS = not significant

Figure 2.7
Support for Citizens' Actions and Crime Conditions⁸⁵

The results of their observations are not as important as the general observations and the methodology used to obtain them. Their approach is to use a detailed survey consisting of a self-administered questionnaire measuring police perceptions of citizen participation. Basically, it measures the reactions of service agents to the various forms and categories of citizen participation.⁸⁶ The research shows areas of police support, ambivalence, and hostility for civilian participation that shape the character of public services in their communities.⁸⁷ This information provides policy makers with the information to weigh the political benefits against potential costs in determining the resource allocation decisions of how best to increase service levels by citizen involvement.⁸⁸ It provides insights of how to

tap into the potential economic benefits of citizen participation with possible increased levels of services, without an increase in expenditures.⁸⁹ Just as importantly, it provides management insights into how to build dynamic citizen participation programs while avoiding the problems created by any past negative interactions between citizens and government agents.⁹⁰

COMPARATIVE COPRODUCTION MODEL

Many helpful ideas have flowed from this typology. As observed, Rosentraub and Warren have emphasized the potential impact of coproduction through the spectrum of service delivery from the macro concerns of policy making to the micro concerns of management.⁹¹ In a related fashion, Rosentraub and Harlow, have used coproduction concepts to study the relationship and interactions between the public and private actors in the service delivery process.⁹² The team of Warren, Rosentraub, and Harlow examine a narrow part of the public and private relationship when they examine the issue of coproduction and equity of distribution of services.⁹³ Of interest to this research is the flexibility and usability of this analytical framework. Building on this work, a tailored comparative coproduction model can be developed to examine the Total Force Policy, and specifically to study the "sizing and shaping" dimension of the Total Force.

Rosenraub, *et al.*, has identified two principal areas for understanding coproduction; civilian participation and forms of production, and combined them into one typology. For the study of the Total Force, it is necessary to break out the area of civilian participation from the form of production to better understand the interaction between civilian participation and the service it produces. Coproduction is being redefined in this research to emphasize the performance of "hard" services to make a "direct" contribution to the production of a service. From this perspective the three types of production; ancillary, parallel and coproduction should be redefined to emphasize the accomplishment of the task. Since all three types of production deal with the concept of coproduction they should be relabeled ancillary coproduction, parallel coproduction, and joint coproduction. Here are the redefined concepts for the different forms of production:

- Ancillary coproduction is the added utility created by civilian participation in direct cooperation with the service agent where the outcome of production is of secondary value to the service delivery process. In other words, the service can be adequately accomplished by the service agent without the extra help provided by the civilian participation.
- Parallel coproduction is the added utility created by civilian participation; largely independent (albeit, with managerial oversight) of the service agent where the outcome of production is critical to the service delivery process. Basically, the work would not get done without this added help.
- Joint coproduction is the added utility created by the civilian participation "conjoint" or in direct cooperation with the service agent where the outcome of production is critical to the service delivery process.⁹⁴ Again, the work would not get done without this added help.

A fourth category of production, independent production, is necessary to evolve the coproduction framework. A volunteer organization may sometimes fail "to serve" the government agency for which it works within the coproduction of services. Instead, it may produce its own self-driven outcomes. It is the responsibility of both to insure that independent production doesn't occur, but even more so for the government agency who has been given the public trust to accomplish the work.

- Independent production is the decrease in utility created by civilian participation; largely independent of or in defiance of the service agent where the activity is not directly linked to producing the service outcome. It is the self-indulgent production and use of resources by civilian-consumers outside of the process of accomplishing the work at hand.

Bish and Neubert capture the civilian participation essence of the Rosentraub, *et al.*, typology. When examining public safety, they find three categories of civilian participation activities to be helpful: (1) individual citizen's activities, (2) group or joint activities, and (3) activities undertaken by citizens in direct cooperation with the police.⁹⁵ As Warren, Harlow, and Rosentraub note, these categories align themselves favorably with the typology (1) individual citizen's activities expressing the civilian participation dimension of ancillary production; (2) group or joint activities aligned with parallel production and (3) activities undertaken by citizens in direct cooperation with service agents aligned with coproduction.⁹⁶ Breaking out the area of civilian participation from the typology, a matrix using Bish and Neubert's civilian participation activity categories can be created along with the newly defined forms of production.

| Coproduction Framework | | | |
|-------------------------------|--|-------|---|
| Type of Production | Type of Civilian Participation Activity | | |
| | Individual Citizen | Group | Citizen in Direct Cooperation With Service Agents |
| Ancillary Coproduction | | | |
| Parallel Coproduction | | | |
| Joint Production | | | |
| Independent Production | | | |

Figure 2.8
Coproduction Framework

To increase the scope of the framework to encompass the passive, active, and competitive activities of civilian participation, the matrix would "expand" to include the additional elements as "sub-types" of each civilian participation activity.

| Expanded Coproduction Framework | | | | | | | | | |
|---------------------------------|---|----------------------------|---|---------------------------------|----------------------------|---|---|----------------------------|---|
| Type of Production | Type of Civilian Participation Activity | | | | | | | | |
| | Individual Citizen | | | Group | | | Citizen in Direct Cooperation With Service Agents | | |
| | P A S S I V E | A C T I V E | C O M P E T I T I V E | P A S S I V E | A C T I V E | C O M P E T I T I V E | P A S S I V E | A C T I V E | C O M P E T I T I V E |
| Ancillary Coproduction | | | | | | | | | |
| Parallel Coproduction | | | | | | | | | |
| Joint Production | | | | | | | | | |
| Independent Production | | | | | | | | | |

Figure 2.9
Expanded Coproduction Framework

The framework can then be tailored to look at specific phenomena in the policy relationships. Rosentraub, *et al.*, further define active and competitive activity into the categories of civilian participant investment or changed behavior. The expanded framework can be tailored in a similar fashion to examine this phenomena:

| Tailored Coproduction Framework | | | | | | | | | | | | | | | | | | |
|----------------------------------|--|--------------------------------------|--|--------------------------------------|--|--------------------------------------|--|--------------------------------------|--|--------------------------------------|--|--------------------------------------|---|--------------------------------------|--|--------------------------------------|---|--|
| Type of Production | Type of Civilian Participation Activity | | | | | | | | | | | | | | | | | |
| | Individual Citizen | | | | | | Group | | | | | | Citizen in Direct Cooperation With Service Agents | | | | | |
| | P | | A | | C | | P | | A | | C | | P | | A | | C | |
| | I N V E S T M E N T | B E H A V I O R | I N V E S T M E N T | B E H A V I O R | I N V E S T M E N T | B E H A V I O R | I N V E S T M E N T | B E H A V I O R | I N V E S T M E N T | B E H A V I O R | I N V E S T M E N T | B E H A V I O R | I N V E S T M E N T | B E H A V I O R | I N V E S T M E N T | B E H A V I O R | | |
| Ancillary Coproduction | | | | | | | | | | | | | | | | | | |
| Parallel Coproduction | | | | | | | | | | | | | | | | | | |
| Joint Production | | | | | | | | | | | | | | | | | | |
| Independent Production | | | | | | | | | | | | | | | | | | |
| P=Passive A=Active C=Competitive | | | | | | | | | | | | | | | | | | |

Figure 2.10
Tailored Coproduction Framework

The idea of a tailored coproduction framework lends itself to being an analytical device. It can be used to examine the Total Force relationship from the citizen participant's perspective, from the service agent's perspective, or to examine the cultural aspects of the relationship, or to look at specific

constructs of the relationship. Of specific importance to the Total Force Policy is the examination of its two constructs of "seamless integration," and "sizing and shaping" the Total Force. While the "seamless integration" dimension is of interest, the primary thrust of the present investigation is the "sizing and shaping" of the Total Force. Specifically at issue is the use of the coproduction framework to provide policy makers insights into how to meet the military requirements of the National Security Strategy from a fiscal-budget-based approach. A tailored coproduction framework could be developed to analyze each of the four areas of prime concern of the fiscal-budget-based approach of (1) force structure, (2) Modernization, Readiness and Operational Tempo (OPTEMPO), (3) support infrastructure, and (4) capability; and, then interrelate them back through a process of risk assessment to the implementation of strategy.

Bureaucracies are characterized by their own culture, operating norms, and structure. To apply the Coproduction Framework to the bureaucratic environment of Reserve participation requires a change in the nomenclature of Bish and Neubert's three types of citizen activities: (1) individual citizen activities, (2) group activities, and (3) activities undertaken by citizens in direct cooperation with police.⁹⁷ To reflect the bureaucratic organization of the USAF, reserve participation activity may be categorized as being accomplished by (1) individual reservists, (2) units, and (3) reservist in direct cooperation with active duty. The simple Coproduction Framework is changed to reflect the USAF organization. It is this Comparative Coproduction Framework which will be used in examining the Active Component and Reserve Component mix in the "sizing and shaping" of the USAF.

| Comparative Coproduction Framework | | | |
|---|---|------|--|
| Type of Production | Type of Reserve Participation Activity | | |
| | Individual Reservist | Unit | Reservist in Direct Cooperation With Active Duty |
| Ancillary Coproduction | | | |
| Parallel Coproduction | | | |
| Joint Production | | | |
| Independent Production | | | |

Figure 2.11
Comparative Coproduction Framework

AN EXAMPLE OF THE COMPARATIVE COPRODUCTION FRAMEWORK

It is important to develop the coproduction framework to systematically understand the attributes of the Reserve Component. This framework may be used by decision makers to better shape the RC/AC mix of forces in the future. According to the literature, no one has used coproduction theory to size and shape military forces. To be blunt, using a strict interpretation of coproduction theory, the Reserve Component as part of the Air Force, should not be contrasted against the Active Component because they are paid for their service and may be considered a different arm of the same governmental organization. However, the literature review on coproduction theory has demonstrated the efficacy of using coproduction concepts to compare the "part-time" volunteer RC citizen-airman and contrast their attributes with the "full-time" AC regular-airman and with a more liberal interpretation may support the development of this framework. By necessity, the initial framework would be very simple and would

illustrate what benefits the tool of coproduction could provide the decision maker. It is not meant to replace any scientific tools of measurement the decision maker might have at his or her disposal, rather it may be a future technique to garner and develop additional insights. At best, the use of coproduction theory is presented as another tool for Air Force leaders to use in sizing and shaping their forces.

TYPES OF RESERVE COMPONENT PARTICIPATION

To use the coproduction framework, one needs to understand the different types of production, and, how individuals and groups participate in the coproduction process. The coproduction process relies on people -- reserve and guard members -- to work with the government officials -- the active duty Air Force members -- to coproduce societal service outcomes -- National Defense. Reserve and guard members either participate alone as individuals, or as an individual within a unit, or collectively as part of a unit. And, in the Air Force, they are very effective in each role.

Using the redefined interpretation of coproduction theory and the comparative coproduction framework, the different attributes of selected Reserve Component organizations may be contrasted and compared with one another and also with their active duty counterparts. This will provide a working knowledge of the comparative coproduction framework. Later, this information will be used in a building block approach to hypothetically size and shape the mix of RC to the AC forces using the simple example of a national demand for 20 Fighter Wings Equivalents.

| Comparative Coproduction Framework | | | |
|---|---|------------------|--|
| Type of Production | Type of Reserve Participation Activity | | |
| | Individual Reservist | Unit | Reservist in Direct Cooperation With Active Duty |
| Ancillary Coproduction | IMA | | |
| Parallel Coproduction | | ANG Fighter Wing | |
| Joint Production | | | Reserve Associate Unit |
| Independent Production | None | None | None |

Figure 2.12
Comparative Coproduction Framework

An example of Reserve members who work alone are Individual Mobilization Augmentees (IMAs).⁹⁸ Think of them as consultants individually assigned to different Air Force organizations. Many of them, in time of war, would take over positions of senior leadership, freeing up the AC leaders to accomplish more important tasks. During Desert Storm, an eclectic collection of scientist and engineer IMA consultants worked on the Air Component Commander's staff to more effectively execute the air campaign against Iraq⁹⁹. Networking with their connections in private industry, they were able to quickly accomplish many "top secret" bizarre and unique capabilities . . . an unclassified example was the development and fielding of 2,000 pound bombs which penetrated over 1,000 feet below the surface of the desert to destroy buried Iraqi command and control centers.¹⁰⁰

An example of RC members who work as individuals within a unit are the AFRES and ANG "Reserve Associate" units of Air Mobility Command. Basically, they are reserve aircrews assigned to a reserve unit who show up to fly the active duty airplanes of their "associate" active duty unit.¹⁰¹ Under the "mixed crew" concept they may actually fly with crew members of the AC. It doesn't sound like a very good idea, but, in fact it works so well at "keeping the fleet flying" by providing a larger pool of crew members which are available to fly that no other portion of force structure depends more heavily on the reserves for augmentation.¹⁰² Associate units are often used as the model for RC/AC cooperation, prompting many recommendations to expand the concept.¹⁰³

An example of Guard members who work as a unit is the New Mexico Air National Guard. Known as the "enchilada Air Force" the New Mexico Guard trains and fights F-16s as a cohesive fighter wing.¹⁰⁴ Renown today for its close air support capability, it grew this legacy from the Vietnam war where the "taco" call-sign of the New Mexico National Guard was one of the most requested fighter call signs to provide "bombs on target" by the men fighting on the ground . . . give me one of them "tacos" they used to say.¹⁰⁵

TYPES OF RC COPRODUCTION

To use the coproduction framework, it is necessary to understand and apply the four different types of production; independent production, parallel coproduction, ancillary coproduction, and, joint coproduction. The coproduction process relies on the interaction between the dominant Governmental organization generating the service -- the United States Air Force -- and the supporting activity -- in this case the organizations of the United States Air Force Reserve and Air National Guard -- to coproduce societal service outcomes -- National Defense. Independent production exists when there is no interaction between organizations and a service outcome is still produced . . . there is no coproduction because there is no direct contact or interaction between the AC or RC. Parallel coproduction occurs when the RC produces service outcomes like those of the AC, but without direct cooperation or interaction with the AC. Ancillary coproduction occurs when the RC contribution to production is

supplemental to the AC service outcome. Joint coproduction is the coproduction of service outcomes through direct and conjoint activities between the AC and RC.

An example of independent production is the "organizing" responsibilities of the Air Force, its Chief of Staff of the Air Force, CINCs, and executive staffs. Air Force Doctrine believes that Air Force forces should be organized to enhance centralized control and decentralized execution.¹⁰⁶ As with all concepts, there will be a lot of complexity polluting the assessment, but, by and large the Active Component should be in charge of executing "centralized control." The RC needs to communicate its requirements to the AC and run its own executive affairs; but, generally the RC should stay in its support role as a "doer of tasks" under "decentralized execution." What can be emphatically stated is that the RC should not be doing any independent production on its own. Its job is to support the Air Force and not independently create its own National Security outcomes . . . If it did, there would be "two Air Forces" generating National Security. In this framework, the RC would never be expected to list any activities across from independent production.

An example of parallel coproduction is the "enchilada Air Force" of the New Mexico Air National Guard. It is designed, organized, and equipped to be an organic fighter wing, although smaller, very similar to an Active Duty Air Force Fighter Wing.¹⁰⁷ Its capability and structure can be "plugged-in" to the Air Force structure at any time as has been demonstrated by other ANG units during Desert Storm, "no-fly" missions over Iraq, and flights in support of the peacekeeping mission in Bosnia.¹⁰⁸ It still has to comply with the requirements of the Air Force's Operational Readiness Inspection and be able to mobilize and deploy within 72 hours of notification,¹⁰⁹ but, it is also part of the "good old boy" National Guard system of the State of New Mexico with its own culture and norms. In the framework, this ANG Fighter Wing was identified as an illustration of a unit involved in parallel coproduction.

An example of ancillary coproduction would be the IMAs from the Air Force's Phillips Laboratory, the high-tech national laboratory responsible for advanced weapons and space research. Senior in rank, most Lab IMAs are Colonels or Lieutenant Colonels and are highly educated. Over half

have Ph.D.s in the hard sciences.¹¹⁰ There may be only one, sometimes two, assigned to each technology directorate. Often, acting as intermediaries from the private-sector, many have had dealings with the lab (both as private contractor and professional officer) for over a decade and provide the "corporate memory" for the laboratory on the evolution of certain technologies or projects.¹¹¹ However, their combined "day-to-day" contribution is ancillary to the overall mission of this national laboratory. In the framework, an IMA was identified as an individual involved in ancillary coproduction.

An example of joint coproduction would be the Reserve Associate units of the Air Mobility Command (AMC). Reserves provide considerable peacetime augmentation to the AMC, amounting to one in every four of the AMC's global missions. With the Reserve Associate concept, they work "hand in glove" with their AC counterparts(10).¹¹² The way the Reserve Associate concept works is that an Active Duty unit, who owns the airplanes and provides a majority of the maintenance and other support for the airplanes, has "associated" with it an RC unit, which just provides the people, mostly aircrew and some maintenance personnel, to assist the Active Duty unit. The RC also provides an overwhelming amount of qualitative experience and capability to the missions, even on top of its significant quantitative contribution. It seems most of the aircrew, specifically pilots, "bring to the table" considerable experience from their civilian jobs as airline pilots as well as the experience gleaned from having served at least one tour on active duty.¹¹³ In this framework, the Reserve Associate units were identified as an illustration of individuals who work within a unit involved in joint coproduction.

THE ECONOMIC APPROACH TO COPRODUCTION

Perhaps the greatest consensus on the economic approach to the concept of coproduction was made at the Workshop in Political Theory and Policy Analysis at Indiana University by the consortium of authors Roger Parks, Paul Baker, Larry Kiser, Ronald Oakerson, Elinor Ostrom, Vincent Ostrom, Stephen Percy, Martha Vandivort, Gordon Whitaker, and Rick Wilson.¹¹⁴ Using the Kiser and Percy concepts of "regular producers," where public agencies undertake production to exchange outputs for

goods and other services; and, "consumer producers" where citizens and groups undertake transformation activities to directly consume produced service outputs,¹¹⁵ they stated:

Coproduction involves a mixing of the productive efforts of regular and consumer producers. This mixing may occur directly, involving coordinated efforts in the same production process, or indirectly through independent, yet related efforts of regular producers and consumer producers. Coproduction, if it occurs, occurs as a result of technological, economic, and institutional influences. Technology determines whether there are production functions for a service where both regular and consumer producer activities contribute to the output. Economic considerations determine whether it is efficient to mix regular and consumer producer activities to produce the service. Institutional considerations determine whether appropriate mixing is allowed in situations where coproduction is technically feasible and economically efficient, and whether mixing is discouraged where it is inefficient.¹¹⁶

The solidarity of this position by Parks, *et al.*, is supported in one way or another by Brudney and England, Bjur, Rich, Rosentraub, *et al.*, and Sharp. Perhaps the most visual representation of the coproduction relationship between regular producers and consumer producers was provided by Brudney and England where they showed coproduction as the "critical mix" between regular producers and citizen consumers.¹¹⁷ Bjur classified the coproduction effort in terms of its impact on the service delivery outcome.¹¹⁸ Rich measured the outcome.¹¹⁹ Rosentraub, *et al.*, believed coproduction could be used to increase quality and reduce costs by providing greater efficiency and effectiveness in the production of services.¹²⁰ And, Sharp based her observations on the dominant model of service delivery from a production orientation.¹²¹ Explicit is the understanding that coproduction involves quantifiable economic activities that can be managed to impact the delivery service process.

Parks, *et al.*, identify two ideal types of coproduction economic relationships: "substitution" and "interdependent" production. Regular producer inputs (RP) and consumer producer inputs (CP) are substitutes when their respective marginal products, call them good or service a and b, can be substituted for one another. Mathematically, for the production of the total quantity of a good or service, $Q = aRP + bCP$. Therefore, it is possible to produce the total quantity of output Q_o by using either the totality of regular producer inputs ($Rpo = Q_o/a$), or consumer producer inputs ($Cpo = Q_o/b$).¹²² For the policy maker, the impact of substitution goods and services is that decisions about adding or reducing regular

producer or consumer producer inputs can be made “independently”.¹²³ Optimization of service delivery is based on the best mix of RP and CP marginal contribution to the desired level of output.¹²⁴

The policy maker loses his “independence” of action when the inputs are “interdependent.” Production of goods and services relies on a direct relationship between regular producer and consumer producer where a change in input with one of the parties directly affects the output of the other party. This relationship can take many forms. Using the economic theory of elasticity, one mathematical form could be $Q = cRP^dCP^e$, where c is a scale factor, d is the elasticity output factor of regular producers, and e is the elasticity output factor of consumer producers.¹²⁵ With the ideal form of interdependence, the total quantity of a good or service requires inputs from both regular and consumer producers. To increase total quantity, an increase of input for both regular and consumer producers must take place.¹²⁶ Optimization of service delivery requires a calculus to adjust the best mix of RP and CP inputs to maximize output.

A norm of measuring economic activity is the budget. Parks, et al., has developed a budget function showing the substitutive and interdependent economic relationships (Figure 2.13). By simplifying service production, where regular and consumer inputs are represented by hours of labor, they evolved the budget function, $B = wRP + oCP$, where w is the wage rate for the regular producer and o is the opportunity cost for the time spent by the consumer producer in the production of a good or service. For a certain budget level, say B_1 or B_2 there is a corresponding mix (the black line) of RP and CP inputs. Optimum budget allocation, and mix of inputs, is represented for budget B_1 at points P_1 and P_3 ; and, for budget B_2 at points P_2 and P_4 .¹²⁷ The specific results are not as important in this example as the overall implication that the “budget function, together with a service production function, determine whether coproduction is economically relevant in a given situation and, if so, the efficient mix of inputs.”¹²⁸

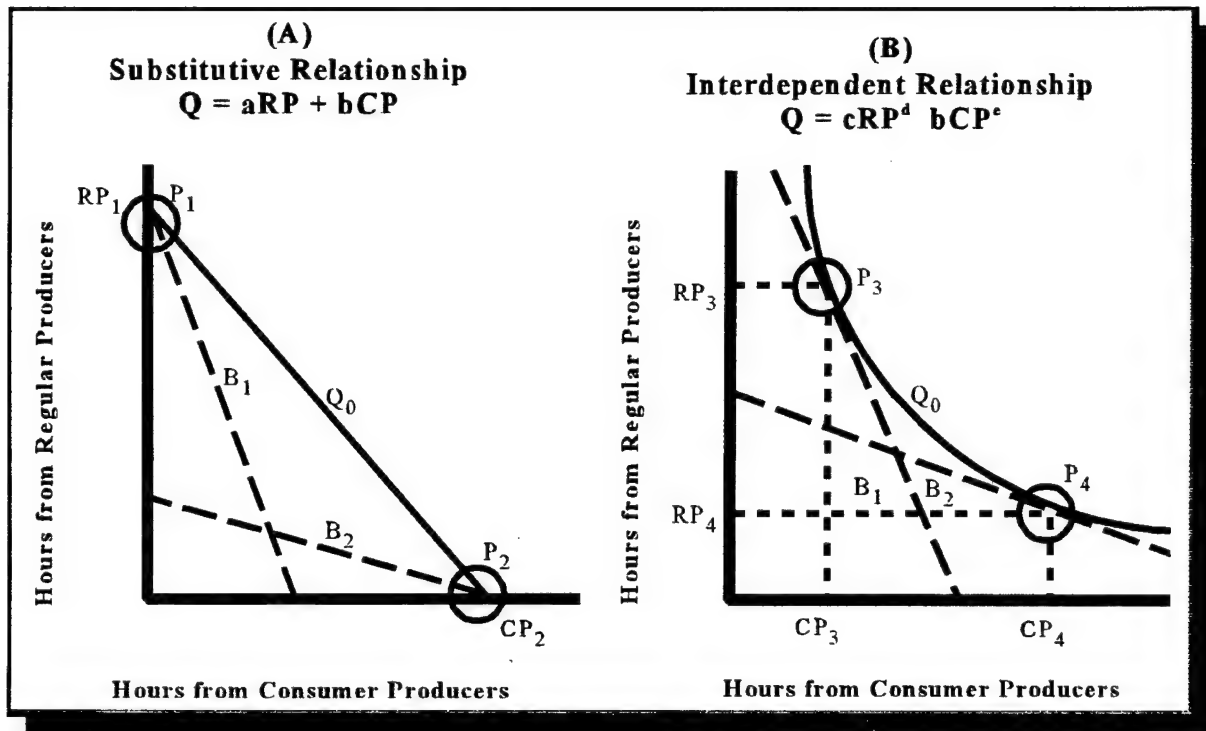


Figure 2.13
Production Relationships and Budget Functions¹²⁹

Consider one example. How is coproduction measured? It can be measured in terms of social "service" provided to a community or it can be measured in terms of the "economics" of coproduction. Using the adage "follow the money," where the most pervasive issue is that the budget drives the size and shape of the Total Force,¹³⁰ a simple, extra example can be made using the economics of coproduction. Coproduction occurs where public agencies transform public capital and labor through the use of citizen capital and labor to coproduce a societal service outcome. It is basic supply and demand economics with a coproduction adaptation of economic theory.

Furthermore, drawing upon the economic theory of substitution and interdependency and assuming the world is both complex and sophisticated, it is very probable that a combination of both substitution and interdependency affects most of the important relationships likely to occur in the "real"

world. Using the simple example of the mix between the "full time" Active and "volunteer" Reserve Fighter Wing Equivalents, the substitution formula can be used.

A SIMPLE EXAMPLE

Given a demand by the National Military Strategy for 20 Fighter Wing Equivalents (FWE),¹³¹ this demand has been met by the supply of 13 very expensive AC Fighter Wings and 7 inexpensive RC Fighter Wings.¹³² The substitution formula $Q = aRP + bCP$ may represent this relationship. Quantity, Q , is replaced by 20 FWE. The regular producer function aRP is represented by the number of fighter wing equivalents supplied by the active component and is represented as 13AC. The Civilian Participant function bCP is represented by the number of fighter wing equivalents supplied by the reserve component and is represented as 7RC. The present relationship would mathematically be represented as $20 \text{ FWE} = 13\text{AC} + 7\text{RC}$.

Shaping the force differently for the same outcome of 20 FWE has a direct impact on the amount of money needed to meet the demand. Manipulating "a" and "b" of the substitution formula, changes the AC - RC mix and affects force structure and budgets. For instance, increasing the number of expensive AC Fighter Wings, and proportionally decreasing the number of inexpensive RC Fighter Wings would fill the demand for 20 Fighter Wings, but would require the expenditure of additional funds. Conversely, if the number of AC Fighter Wings was decreased and the number of RC Fighter Wings was proportionally increased, funds would be freed up and the demand for 20 Fighter Wing Equivalents would be met. If the budget line for the pure substitutive relationship is followed in Figure 2.13, Production Relationships and Budget Functions, the most efficient budget would occur at point P2 where ZERO active duty wings are needed for the Reserve Component to fulfill the total demand of twenty Fighter Wing Equivalents. Of course, the Reserve Component cannot supply the service alone, inputs based on the attributes of both components are required for the successful production of the service which twenty fighter wing equivalents provides to the National Defense.

An important part of the relationship is interdependent. As with all matters exhibiting interdependent relationships, there is a point at which it does not make sense for it to go beyond. In the example, the floor for the Active Component is driven by its "full-time" institutional needs and requirements. The Active Component "needs" the minimum number of wings to supply its institutional requirements, for instance a sufficient number of wings to provide for the development of USAF leadership, man USAF staffs, sustain overseas presence, respond to unexpected crisis, and provide the experienced cadre for the Reserve Component. Hypothetically, let ten fighter wing equivalents meet this "need." Conversely, the ceiling for the Reserve Component is driven by its "volunteer" attributes which limit participation to a "part-time" basis. Potentially, the largest limitations on the reserve supply of volunteers are individual member conflicts with his or her civilian career and lives; and, the lack of experienced personnel leaving the Active Component to provide the manpower pool for the Reserve Component. Hypothetically, let twelve fighter wing equivalents be the ceiling. With a demand of 20 fighter wing equivalents, and a supply floor of 10 AC wings and a supply ceiling of 12 RC wings, what should the mix be? The answer is more complicated than it at first glance would appear to be. The logical answer would seem to be 10 AC wings and 10 RC wings because the floor of 10 AC wings should dominate the relationship because that is what is required to meet institutional "needs."

INSTITUTIONAL PRODUCTION, ECONOMICS, AND PARTICIPATION

Coproduction necessarily involves interdependence between the regular producer and citizen-consumer. This interdependence is characterized by a transformation process where inputs from both the regular producer and citizen consumer combine in the production of some good or service.¹³³ A norm of reciprocity exists between the institutional agents and the citizen-consumer, which Rich Wilson illustrates to show the two-way character of production relationships between service agents and citizens.

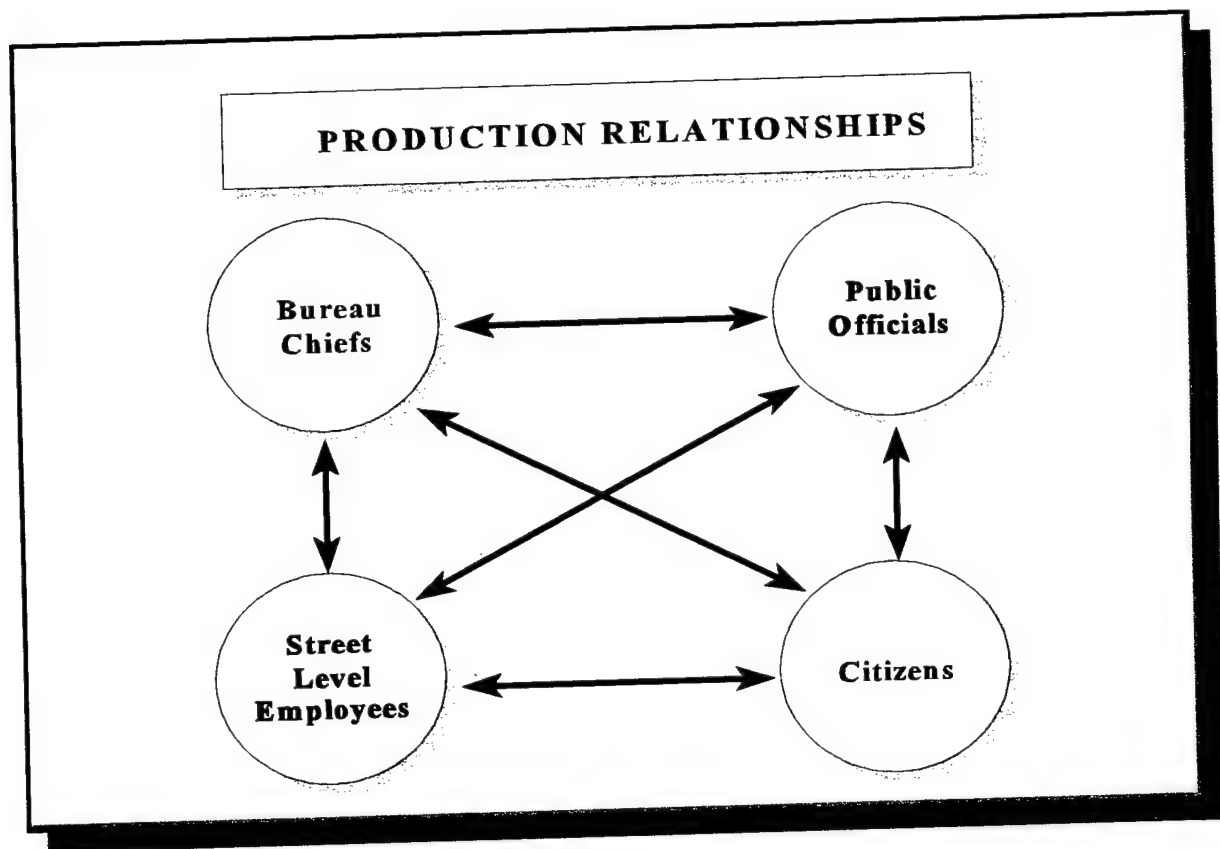


Figure 2.14
Production Relationships¹³⁴

Wilson further elaborates on the economic dimension of coproduction by using micro economics theory to combine both the substitutive and interdependent relationship into one mathematical function. Emphasizing that regular producers earn a "wage" in the work they perform, coproduction may be considered as part of the production process of societal goods and services accomplished by the joint mixing of the marginal productivity of inputs by hired producers and consumer-producers.¹³⁵ Mathematically, the mix of inputs may be represented by:

$$Q = aC_p + bH_p + C_p d H_p e, \text{ where:}$$

Q = quantity output of a good;

C_p = consumer inputs;

H_p = hired producer inputs;

a, b = marginal outputs of consumer and hired producers, respectively;

d, e = output elasticities of consumer and hired producers, respectively.¹³⁶

Coproduction may either increase the quantity of the good or service produced, or reduce costs for a given quantity, or a combination of both cases. Wilson demonstrated that by holding hired producer inputs constant, quantity of production increases with added consumer producer inputs. Figure 2.15 shows this relationship as consumer inputs, that is citizen participation in the production process, moves from level a to level b, directly increasing the quantity produced from Quantity 1, to the greater level Quantity 2.

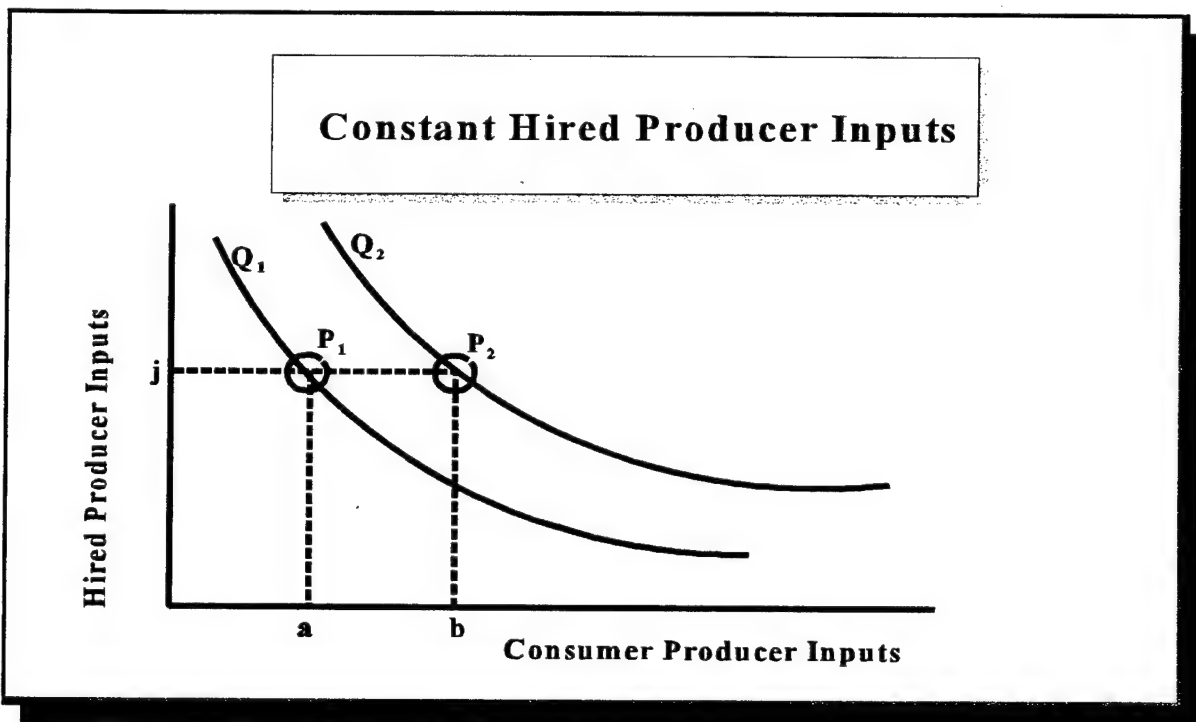


Figure 2.15

Constant Hired Producer Inputs¹³⁷

Wilson also demonstrated that costs may be reduced in the production of a given quantity. Figure 2.16 shows when consumer producer inputs increase, the need for hired producer inputs decreases, with the resultant cost savings being accrued from the savings in paying for less hired producers.¹³⁸ As noted earlier, the case with the reserve component is somewhat different with

Reservists being paid for their contribution. However, this logic is still applicable to the Active and Reserve Component mix where the Reserve Component is much less expensive than the Active Component. For instance, the Reserve Component provides over one-third of the combat capability, and over one-half of the airlift capability of the Air Force . . . for 15% of the USAF Total Obligated Authority.¹³⁹

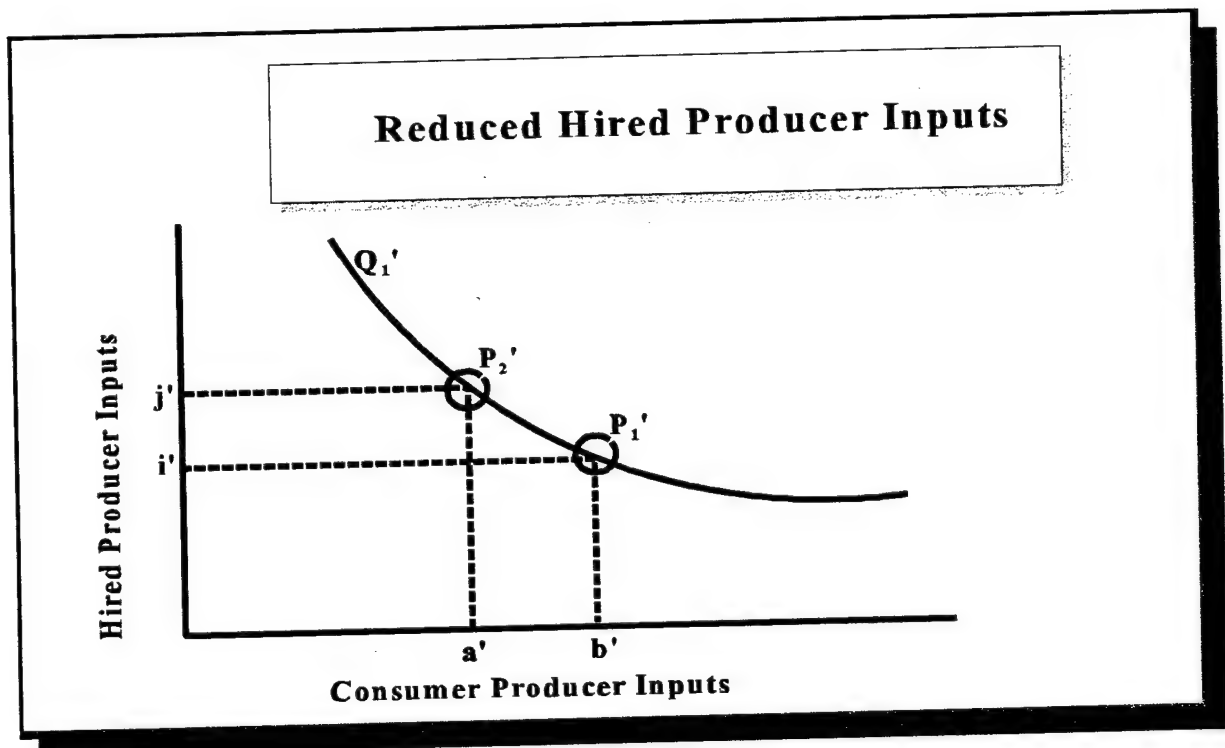


Figure 2.16

Reduced Hired Producer Inputs¹⁴⁰

The previous simple example illustrates the usefulness of this economic perspective by suggesting that Active Component "Hired Producer" inputs may be met at the institutional need floor of 10 Fighter Wing Equivalents, illustrated as point P_2' in Figure 2.16. Reserve Component production would increase from 7 FWE at point a' to 10 FWE at point b' . The savings would accrue from cost savings of the Active Component reduction in Hired Producer Inputs (j' to i') less the addition in costs to

provide the Reserve Component increase in consumer producer inputs (a' to b'). In the production of Fighter Wing Equivalents, and most outcomes of National Defense, the inputs are not only labor expensive, but also capital expensive. In the special case of providing for the production of operational capability, such as Fighter Wing Equivalents, the support infrastructure of labor and capital is also very expensive. Any reduction in Hired Producer Inputs also translates into less capital expenditure and is leveraged into even more dramatic cost decreases by doing away with the supporting personnel and capital infrastructure. Therefore, cost savings of moving three fighter wings from the Active Component to the Reserve Component would have a multiplier effect of potential cost savings from the decrease in necessary Active Component infrastructure.

The economic perspective is important only relative to other elements of the coproduction process. It is relative to the internal coproduction enabler of participatory citizenry, and, is constrained by the external elements of technological feasibility, economic feasibility, and institutional considerations.¹⁴¹ Participatory citizenry is critical in its productive role in the distribution of services, and, is more critical to the relationship between the citizen and government.¹⁴² Citizen involvement insures better communication, control, and predictability of service delivery outcomes of the governmental agency.¹⁴³ Unfortunately, the most "politically" relevant constraint on coproduction is that of institutional considerations.¹⁴⁴ Institutional constraints may limit citizen participation in the service delivery structures from the institutional perception of furthering its own self interest "needs" over its institutional responsibility of what is best for society.¹⁴⁵

Under these conditions of extreme uncertainty and opportunism, Wilson positively concludes:

- Coproduction contains the classical attributes of other forms of participation.
- Coproduction affects the redistribution of goods and services in society, thereby affecting the types of policies which public agents implement.
- Coproduction leads to control over public agents through monitoring activities.
- Coproduction serves as a demand mechanism, enabling individuals to signal their preferences for service delivery via their own contributions to the production of the service.

- Coproduction helps inform individuals as to the process of service production.
- Coproduction is a means of enabling individuals to come to understand their own environment.
- Coproduction may be valuable in augmenting the scarce supply of services by a producer.
- From a normative perspective, coproduction may serve to heighten citizen interest in the society which envelops him.¹⁴⁶

In all scenarios, the allocation of funds must not be overlooked. The central issue to most production strategies, including coproduction, is resource allocation¹⁴⁷ -- who gets the money? The institution of the Air Force determines the resource allocation priorities and budgets. The budget process, dominated by the Active Component leadership and staff with the coordination of the Reserve Components, determines the resource allocation priorities. Ultimately then, this is the question: How does the Air Force size and shape the reserve force to meet its institutional needs?

INSTITUTIONAL COPRODUCTION PROCESS

Demonstrated performance, common values and beliefs, with Active Component leadership commitment combined with Reserve Component autonomy, provide the harmony of service delivery that mitigates the possibility of opportunistic behavior by either component. However, the resource allocation process is primarily controlled by the Active Component where their institutional considerations "rule" the "needs" process. The institutional considerations of coproduction, as Larry Kiser points out, require policy makers to select policy options from among alternative institutional policies from an institutional theory of coproduction "when both citizens and government agencies produce the same outcomes."¹⁴⁸ Based on economic theory of household consumption, institutional coproduction transforms public goods and services by civilian participation to produce commodity or service outcomes.¹⁴⁹ Visually, the institutional coproduction process of transforming both market and public agency capital and labor through the service delivery process of citizen participation to produce commodity outcomes or service is illustrated:

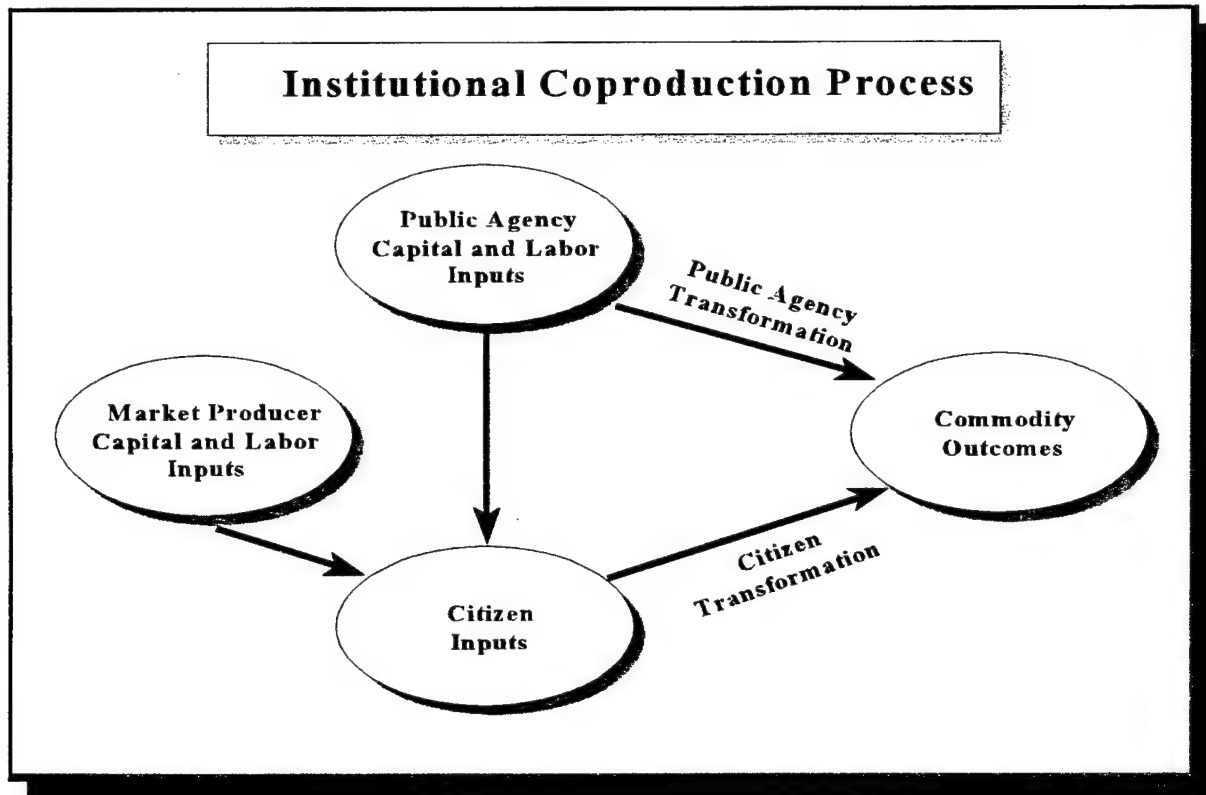


Figure 2.17
Institutional Coproduction Process¹⁵⁰

The institutional coproduction process indicates citizens have two sources of capital and labor inputs from the overall market and the public agency which they can transform with their own time and energy into commodity outcomes.¹⁵¹ Situational boundary rules establish the coproduction relationship between the market, public agency, and the citizen.¹⁵² Changing or manipulating the boundary rules of the institutional arrangements between the public agency and citizen may be one way to affect coproduction with its resultant impact on participation, cost, and outcome.¹⁵³ There are six sets of boundary rules that affect the relationship between the public agency and the participating civilian:

- **Boundary Rules** set the number of civilian participants interacting with the public agency by determining who is allowed to participate and who is excluded.

- Scope Rules limit the kinds of outcomes permitted by the public agency for their civilian volunteers.
- Position Rules is the distinction or rank or privilege a civilian participant obtains by entering the process at a point in time different from other participants.
- Authority Rules limit the allowable citizen activity or actions permitted by the public agency.
- Information Rules establish the language and communications channels prescribed by the public agency for the civilian participants.
- Aggregation Rules pertain to the mechanism and number of civilian participants who must agree to a decision before an action may take place.¹⁵⁴

Institutional rules determine the degree of coproduction allowed within the bureaucratic conditions of a public agency where coproduction is technically and economically feasible.¹⁵⁵ However, as Percy concluded, institutional coproduction is not likely to be an easy or popular activity.¹⁵⁶ Many have adopted a similar view. Brudney observed the self-interest of public employees who may use scope rules to "preclude coproduction programs in which citizen inputs are substituted for those of paid professionals; these groups may consider the costs (of cooperating with civilians) unacceptable."¹⁵⁷ Bjur when he presented his social exchange theory of volunteerism, was investigating position rules where "some type of organizing structure is usually needed in order to frame the roles which can sustain the prestige motivation necessary to continued participation."¹⁵⁸ Sharp, with her dominant model, was concerned about authority rules where "service agents may balk at sharing their "turf" with citizen volunteers, because they fear disruption of their routines or a weakening of their claim to professional autonomy."¹⁵⁹ Whitaker, with his concept of "civilian participation," found information rules potentially inhibiting of coproduction where "citizens' problems in communicating requests in agency terms are important in improving service delivery."¹⁶⁰ And, Rosentraub and Warren, when examining "civilian participation in service production," observed a varying standard of aggregation rules where service providers are more open to citizen participation in the production of activities that do not directly compete or entail conjoint behavior with the service agency.¹⁶¹ This offers "a sober view for administrators who are interested in developing programs designed to include citizens in the production

of services. For any of the more active or substantive forms of participation, a great deal of work will be required to avoid conflicts and misunderstandings."¹⁶²

A policy maker must know how to structure the "sets of rules" in order to apply the correct mix to size and shape a policy. Kiser suggests policy makers use four different implications about "sets of rules" to develop and strengthen the positive relationship between a public agency's institutional arrangements and citizen coproduction:

- An individual rule is usually aimed at a specific problem, therefore, it takes a large number of institutional rules to control organizational responses. The implication for the policy maker is that it takes a configuration of rule sets instead of solitary rules to exert influence or change in an organization such as promoting coproduction behavior.
- A second implication is that to align boundary rules is to encourage outcomes beneficial to both the public agency and the coproducing citizen. It is the mechanism for citizen participation to access the commodity group scope through demonstrated performance.
- A third implication is that it is beneficial to arrange institutional rules to permit mostly those citizens who have the technical skills, motivation, and an established self-interest to enter into the coproduction relationship with the public agency. It is desirable to align citizen attributes, such as common values and beliefs, with the commodity group scope of the public agency.
- A fourth implication is that institutional arrangements between the public agency and the coproducing citizens are not perfect substitutes. The relationship is dependent on some form of institutional manipulation of the rule sets (leadership commitment) to affect both an accepting organizational climate and to encourage citizen coproduction. However, citizen production is not based on restrictive rule sets but requires greater flexibility in the range of citizen activity (autonomy) to coproduce commodities with the public agency.¹⁶³

Normative requirements refer to the basic relationship agreements that all members of the coproduction transformational process must share if the public agency is to coproduce efficiently, without undue financial or performance costs. The normative requirements of the Active Component's coproduction transformational process with the Reserve Component may be better understood by adapting Kiser's institutional coproduction process into a model of the USAF institutional coproduction process. Then, the normative attributes of the relationship may be examined from the perspective of Kiser's four implications about institutional arrangements and citizen coproduction to better understand the major normative questions concerning the active and reserve component relationship: (1) Why does

the Active Component like the Reserve Component?; (2) Why does the Reserve Member like the Air Force?; and (3) How do the Reserve Component and Active Component work together?

First, the USAF institutional coproduction process must be evolved from Kiser's model.

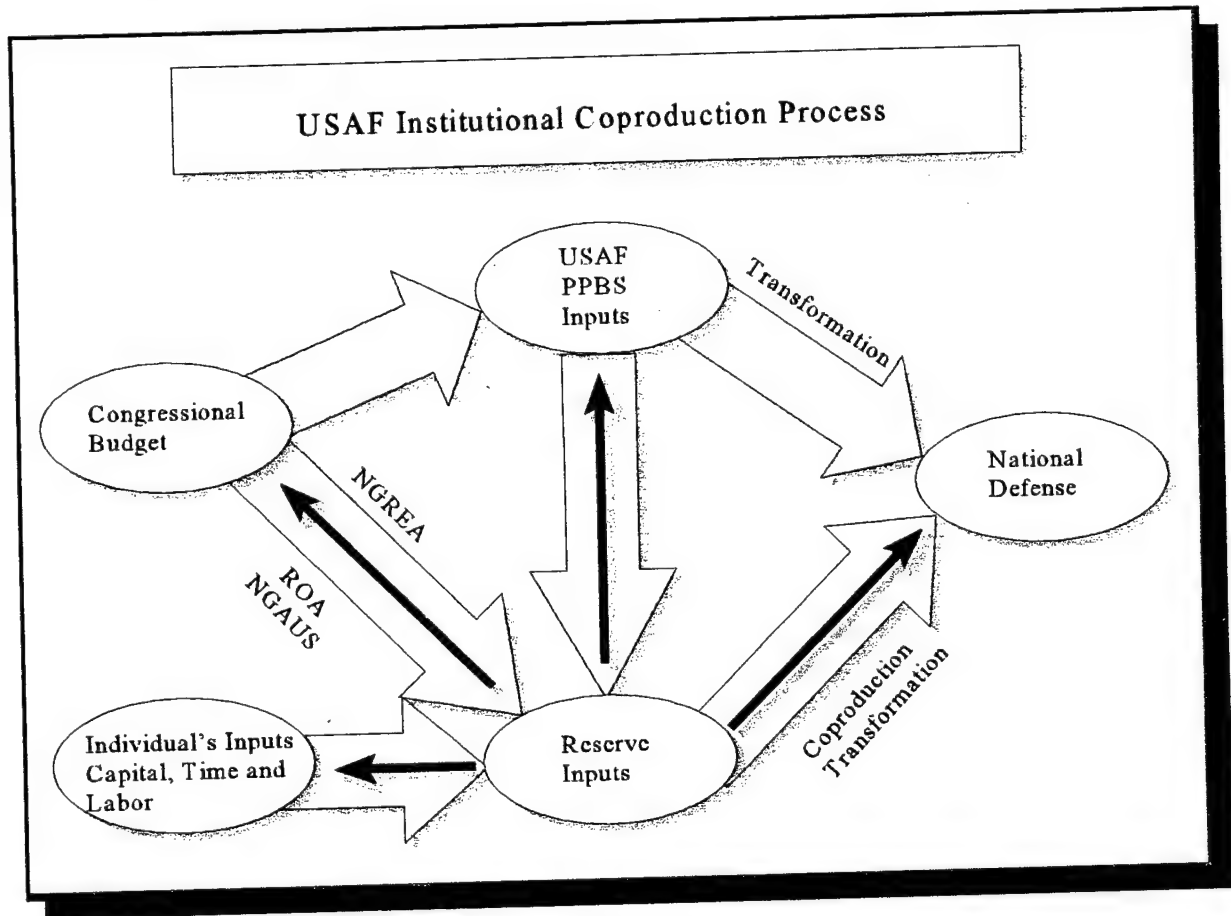


Figure 2.18
USAF Institutional Coproduction Process

The USAF Institutional Coproduction Process is essentially a politically driven process. The primary political actor is Congress. Congress has the power of the purse with its legislative budget authority to appropriate public funds. It is the institution which represents the citizens' interests to spend the taxpayers money for the public good. National Defense is but one public good which is competing

for resources. The Air Force is but one institution among many which is competing for resources which comprise the public good of National Defense. The Air Force's major access to Congress is through the formal DoD PPBS budgeting process. Congress appropriates public funds based on DoD's budget request, as modified by the public demand, which is determined by Congress. The Air Force allocates the funds according to the PPBS. The funds may be directly transformed into providing for the National Defense, or may serve as inputs with the Reserve Component to be coproduced into National Defense. Therefore, the Air Force's provision of National Defense is the sum of the production outputs of both the Active and Reserve Components.

The Reserve Component receives most of its inputs from the PPBS resource allocation system. It has "a place at the table" when the Air Force makes its resource allocation decisions where the Reserve Component perspective may be presented. It also has informal access to Congress outside of its institutional role as a Reserve Component in the form of citizen consumers. Individual citizens who happen to be Reservists may access Congress directly, or collectively, as part of interest groups, or they may access Congress as a political block. The effect on Reserve inputs has been significant. The two principle interest groups, the Reserve Officer's Association (ROA) and the National Guard Association of the United States (NGAUS) have made demands on Congress for greater reserve component resources which have resulted in the PPBS supply of more appropriations in the Air Force's budget. The result is increased inputs to the Reserves who transform them into added National Defense. These interest groups are also instrumental in obtaining funds directly from Congress (outside of the Air Force Budget request) for the reserve component through the National Guard Reserve Equipment Appropriations (NGREA). Congress in Fiscal Year 1996, provided 260 million dollars through NGREA, outside of programmed Air Force requests, as additional inputs.¹⁶⁴ These inputs were transformed by the coproduction process into National Defense.

It is an often undervalued fundamental fact that a Reservist is not a regular airman. From the individual "participating" reservist's perspective, the most important input is his or her own time, cost,

and labor to contribute. While the reservist is motivated "to serve" America, his or her primary interest resides in the civilian world of family and civilian career. The reservist is monetarily compensated for his or her participation, but often the economic impact may be great,¹⁶⁵ and there is always the opportunity cost of the time and labor contributed. Reserve participation is voluntary and largely motivated by the best attributes of human nature; patriotism, association with the Air Force, and maintaining or perfecting a specialized skill. These all contribute to his or her "personal service" to perform the useful work of National Defense. The quality of this Reserve input is a primary factor in the Air Force's successful coproduction transformation of all the inputs into the public commodity of National Defense.

WHY THE ACTIVE COMPONENT LIKES THE RESERVES

It is important to understand why the Active Component likes to use the Reserve Component. The answer is simple; it gets the job done with a minimum of hassle and cost.¹⁶⁶ The bottom line is that the RC gets the job done because the AC cares to provide realistic missions and equity in resources.¹⁶⁷ RC units do their job to the same high standard as AC units with both being measured by the same yardstick of the Air Force's Operational Readiness Inspection.¹⁶⁸ Within the strategic airlift community, there are associate units where the AC and RC literally work side-by-side, where on any given mission, the aircraft commander could be a reservist, the copilot-pilot and the remainder of the crew on active duty.¹⁶⁹ To maintain this capability, the Air Force pays for it. The Air Force spends six times the amount of money for one-fourth the number of reservists as the Army.¹⁷⁰ Even with that cost, the RC is cheap - about one-fourth to one-half as expensive as an AC equivalent operational unit.¹⁷¹ But, more importantly, when a CINC asks for a military capability, say a fighter squadron, he or she gets it - the same capability - be it an ANG Fighter Squadron or an Active Duty Fighter Squadron.

WHY THE RESERVES LIKES THE AIR FORCE

It is also important to understand why the RC likes to be associated with the AC. The RC believes in the mission and culture of the Air Force. High commitment gets high results where the average aircrew contributes over 110 days a year to the Air Force mission.¹⁷² It comes down to a richness of association that is reinforced by language and custom, unified by common terms and symbols, to undertake specialized tasks such as flying, in the pursuit of one of man's loftiest aims - to serve his country while adding value to America.¹⁷³ Four out of five new members of the RC were trained and served on active duty.¹⁷⁴ They want to maintain their association with the Air Force and serve their country, but not to the exclusion of other interests in their lives.

Just as important, the RC has a purity of purpose, where it is a "doer" of tasks and where its individual members as part-time workers don't have the time to do the secondary functions or plug into the bureaucratic norms. For example, when an RC aircrew member shows up to fly, he or she just flies - often for an entire career in the same unit -- no additional duties, no worries about the next "career enhancing" assignment, or filling the "non-flying" Pentagon square.¹⁷⁵ This benefits both the RC and AC. The individual can focus on his or her specialty to achieve high levels of professional competency. For illustration, the author recently talked to a pilot who just joined an Air National Guard (ANG) fighter squadron and he commented that there were four "target arms" in his squadron.¹⁷⁶ A "target arm" is the patch worn on the shoulder of an aircrew who has completed fighter weapons school-- it is like earning a Ph.D. in flying fighters -- and most AC squadrons are lucky to have just one.¹⁷⁷ The bottom line is that the RC is composed of competent professionals who want to serve their country.¹⁷⁸

HOW THE RC AND AC WORK TOGETHER

It is important to understand how the RC and AC work together. Succinctly stated, one simple concept describes this relationship - trust.¹⁷⁹ The AC trusts the RC to do the mission it says it can do, and the RC trusts the AC to provide the necessary resources.¹⁸⁰ This relationship has grown over years of friendship where shared mutual interests and past associations have produced the confidence necessary to form a working team.¹⁸¹ The AC/RC team has operated out of a sense of mutual respect as far back as the Berlin Airlift of 1948-49 where 277,000-plus sorties were flown together up to today's flying of ANG F-16s in harms way over Bosnia and Iraq.¹⁸² The present Total Force relationship gained momentum under the resource rich environment of the 1980's Reagan build up. The size of the reserves grew from 1980 to 1986 over 35%. The AC evolved and implemented the "sets of rules" to provide the reserves with a war fighting capability based on the resourcing of the three operational tenets of high levels of readiness, quickly deployable assets, and thorough integration with the active Air Force.¹⁸³ The AC has always provided the "organizers" for the team, the leaders and staff responsible for organizing, training and equipping the Air Force - the Chief of Staff of the Air Force and the Air Staff - and those responsible for the operational art of war - the CINCs, Air Component Commanders, and their staffs. The RC brings an inexpensive "come-as-you-are" capability to increase the size of the force.

If we "follow the money," the Active Component Leadership has provided extraordinary support for the Reserve Component. During the resource poor environment of the post cold war draw-down, Air Force leadership made the difficult decision to down size the active component by over one-third while leaving the reserve component intact.¹⁸⁴ Later, smaller reductions were also made in the Reserve Component, but this did not affect the overall philosophy. In effect, it has established the trend where the proportional role of the Reserve Component has continued to increase over the 1990s.¹⁸⁵ The Guard and Reserves have responded in kind by providing the capability the Air Force needs solely through the use of volunteers. In fact, the culture of volunteerism is so ingrained in the culture of the reserves, the

leadership of the Guard and Air Force Reserve committed to Air Force planners the availability of 25% of their capability from the start of any crisis -- without the exercise of Presidential involuntary callup.¹⁸⁶

It is important to note that the hallmark of this relationship has been RC autonomy. Or, to put it in terms of Air Force doctrine: centralized control and decentralized execution.¹⁸⁷ Because the RC is so effective at getting the job done, the AC has not overly burdened the RC with bureaucratic red tape and by and large has left it to manage itself. RAND, the federally funded think tank who does research for the Air Force, when researching the Air Mobility system found it "remarkable" how few agreements there are between the AC and RC, and, could find no formal agreements on resource allocation of aircraft missions, i.e., where the money is.¹⁸⁸ Why? . . . The United States Air Force trusts the Reserve Component to do its job.¹⁸⁹

From this understanding, "sets of rules" to increase coproduction for the United States Air Force should emphasize the four normative attributes of (1) providing substantial missions for the RC to accomplish with the resources to do it; (2) providing an accepting culture of trust where reservists may feel the "prestige" of association; (3) active duty leadership commitment to the Active and Reserve Component partnership; and (4) reserve autonomy to create the flexibility to best exploit the attributes of volunteer civilian participation. Further investigation is necessary to empirically test these attributes. But, first, the case must be made that the concept of coproduction is applicable to size and shape the Total Force.

ASSESSING THE "FIT" OF COPRODUCTION TO SIZE AND SHAPE THE TOTAL FORCE

Having distinguished three building blocks to establish the efficacy of coproduction to size and shape USAF's Total Force, the concept is ready to be assessed as a potential policy making tool for senior leaders in the development and implementation of the Total Force Policy. The first building block is the redefined concept of coproduction that is useful to describe the active and reserve component

coproduction relationship. It is defined as the "critical mix" of coproduction attributes to establish the active and reserve component relationship which is the "voluntary" and "active" participation of reserve members in the performance of "hard" inputs to make a "positive" and "direct" contribution to the production and delivery of the service outcome. The second building block is the comparative coproduction model that is useful as a potential analytical tool to empirically study force mixes between active and reserve components. It examines the four types of production: *ancillary coproduction*, *parallel coproduction*, *joint coproduction*, and *independent production*; and matrixed against the attributes of reserve participation activity between the individual reservist, unit, and reservist in direct cooperation with the active duty. The third building block is the USAF institutional coproduction process based on economic theory to optimize force mixes, but, also includes the use of "sets of rules" to justify, design, implement, and change the bureaucratic process to become more coproductive. It basically shows a politically driven resource allocation process where the USAF is the dominant bureaucracy in the process responsible for formulating the "sets of rules" to efficiently allocate resources to its coproducing Reserve Component in the production of the commodity of National Defense.

To assess coproduction most effectively, an empirical examination of each of the constructs of each building block must be undertaken. From this examination, better understanding of the relationships would normatively provide the decision maker with "sets of rules" for solving or optimizing the institutional coproduction process. Using basic economic, financial management, and public budget theory these rules may take the form of a calculus, algorithm or other mathematically derived relationship that would assure the optimal mix of active and reserve components to accomplish a military capability for the least cost. Just as important, the "set of rules" may take the form of heuristics for increasing the strength of the interrelationship between active and reserve members by eliminating cultural, bureaucratic, and other barriers in the coproduction process.

Unfortunately, normative requirements largely define the "state of the art" of the social science disciplines, and specifically the relatively new concept of coproduction has not been empirically

scrutinized to the degree necessary to have tested and proved the proposed constructs of coproduction concepts. In fact, normative discrepancies make the synthesis of ideas expressed in the literature more difficult.¹⁹⁰ However, it is because of this diversity in approach that provides for greater understanding and the potential of better policy implementation of citizen productive involvement with public agencies.¹⁹¹ Also, most approaches recognize the importance of citizen-productive activities for the effective provision of many services.¹⁹² Stephen Percy, in his review of coproduction empirical studies, finds "the scholarly work on citizen coproduction, together with assessments of study commissions and statements by public officials and citizen groups, suggests a variety of propositions relating citizen coproduction to service outcomes."¹⁹³

- Proposition 1: Citizen coproduction is positively associated with higher levels of urban services provided in the community.
- Proposition 2: Citizen coproduction is associated with lower budgetary costs for provision of current service levels.
- Proposition 3: Citizen coproduction enhances the responsiveness of service agencies to the needs and preferences of citizens in the community.
- Proposition 4: Citizen coproduction increases citizen knowledge of service production technology and constraints.
- Proposition 5: Citizen coproduction of services may increase other forms of citizen participation in local government.¹⁹⁴

Percy's investigation found empirical evidence was lacking with many of these propositions but "practical experience and general consensus tend to support them."¹⁹⁵ He called for more empirical research to learn more about coproduction, its impact on service delivery, and ways to make it more effective and efficient.¹⁹⁶ However, these propositions may be used as an indicator of the general condition of coproduction between the citizen participant and the public agency.

This research proposes to use these propositions, as modified to the specific environment of the Reserve Component's coproduction of National Defense, to test the efficacy of coproduction as a policy making tool to size and shape the USAF's Total Force. Modified, the propositions become:

- Proposition 1: Reserve Component coproduction is positively associated with higher levels of services provided for National Defense.
- Proposition 2: Reserve Component coproduction is associated with lower budgetary costs for provision of National Defense.
- Proposition 3: Reserve Component coproduction enhances the responsiveness of USAF service delivery to the needs and preferences of citizens for National Defense.
- Proposition 4: Reserve Component coproduction increases citizen knowledge and acceptance of military technology and constraints.
- Proposition 5: Reserve Component coproduction of services may increase other forms of citizen awareness and participation in government.

If the state of coproduction examination within social science has been largely normative in nature and no one has applied coproduction concepts to the military relationship between the active and reserve components, what then? It may only be speculated that a "fit" between coproduction concepts and USAF Total Force Policy exists. It is beyond the scope of this research to empirically test this relationship. However, it is possible to assess the efficacy of the "fit" of coproduction to "size and shape" the USAFs Total Force through a normative examination of the modified coproduction propositions by interviewing and collecting anecdotal observations by Total Force Policy makers.

Two distinct sets of questions may be asked. The first set contains normative questions as to the "existence" of the coproduction process in the Air Force. The second set consists of descriptive questions concerning the "health" of the coproduction process. Theoretically, this methodology is separating two issues; the first is assessing the "present" condition of coproduction with its Active and Reserve Component mix under today's Total Force Policy, and, the second issue is the coproduction development of the "future" size and shape of the Total Force.

The first issue is the evaluation of the consequences for the organization of policy makers adopting coproduction as a management style. The outcome may be a normative model in which the policy makers' management style is the independent variable and the organizational consequences of this

management style are the dependent variables. The normative model being assessed is the USAF institutional coproduction process. The management style being assessed is coproduction as measured by the constructs of the redefined coproduction concept as expressed in the modified coproduction propositions.

For the design and scope of this research, what the research seeks to answer is whether coproduction "exists" or "does not exist" as a part of the USAF institutional coproduction process.

The second issue is the study of the coproduction processes that generates the behavior, mix, and contribution to output between the participants in the production of institutional services. An outcome of the latter may be the development of a descriptive framework in which the management of the active and reserve component mix is the dependent variable, and, situational factors and individual characteristics are the independent variables. The descriptive model being assessed is the comparative coproduction framework. The impact of coproduction, throughout its spectrum of service delivery outputs, may be assessed. Situational factors may be expressed in terms of the redefined attributes of the coproduction concept that contribute to the four types of outcome production; ancillary coproduction, parallel coproduction, joint coproduction, and independent production. Individual characteristics of the relationship between active and reserve components are represented by the type of participation activity. What the research seeks to answer is whether the present coproduction relationship is "healthy" or "not healthy" in the satisfaction of the USAF's delivery process to produce service outcomes. The framework may also be used to show the mix between active and reserve components to satisfy a desired production outcome.

Graphically, a matrix of the results of the assessment may be developed. First, it would normatively show if coproduction concepts are or are not used in determining the present USAF Total Force Policy. Second, it would normatively show if the coproduction relationship was either healthy or not healthy. The implication being that the variables of a healthy relationship would be expanded by

policy makers to make the relationship even better; and, if not healthy, the variables would be changed by policy makers to create a more healthy relationship.

| Research Decision Matrix | | |
|--|---------------------------|----------------------|
| | Existence of Coproduction | Healthy Coproduction |
| USAF may be used as a model of Total Force Policy Coproduction | Yes | Yes |
| USAF may not be used as a model of Total Force Policy Coproduction | No | No |

Figure 2.19
Research Decision Matrix

Assessing the USAF coproduction processes and relationships according to the research decision matrix would make it possible to propose the USAF coproduction experiences as a model for Total Force Policy implementation throughout DoD. If coproduction was found to exist in the Air Force, and, those relationships were found for the most part to be healthy, then the efficacy of coproduction has "fit" as a potential management tool for senior leaders to use in the development and implementation of the Total Force Policy. The implications are clear. More study of the coproduction process within the Air Force will need to take place. Lessons learned from this examination may be used to change the "sets of rules" within the institutional coproduction process to make the Air Force more efficient and effective, both from the financial management perspective and from the human management perspective. These insights may then be carried over to other institutions involved in the development and implementation of the Total Force Policy. Simply stated, coproduction concepts may be used as the philosophical foundation to justify, define, and implement the two major constructs of the Total Force Policy; seamless integration of the participants, and the sizing and shaping of the Total Force.

ENVISION SIZING AND SHAPING FORCES OF THE FUTURE

If coproduction, especially its economic dimension is applicable to the Active and Reserve Component relationship, what then? It can only be speculated, but it may lend itself to be used as a tool in the resource allocation process as discussed by James Ferris where he exacts the concept of coprovision as a specialized subset of coproduction. He states:

Coproduction is, in essence, a resource allocation process with potentially significant ramifications for the efficiency objectives of society; it should be subjected to the same scrutiny that public expenditure programs receive because it entails the use of scarce resources.¹⁹⁷

Ferris further elaborates:

(T)he notion of coprovision which is defined as the voluntary involvement of citizens in the provision (financing) of publicly provided goods and services or their close substitutes. This concept extends and modifies the coproduction concept to permit a more meaningful framework for examining the efficiency and equity effects of voluntary behavior of citizens, through time and money donations, in the delivery of public services ...¹⁹⁸

Ferris identifies six coproduction forms of citizen involvement in their roles as consumer producers of collective goods and services. Three of the six forms of citizen involvement are applicable to the more stringent concept of coprovision of goods and services:

- Public Sector finances are impacted by citizens assisting public agencies in producing services by volunteering their time as inputs into the production process; thereby, acting as economic substitutes for public employees.
- Fiscal resources are impacted by citizens providing a market substitute for publicly produced goods or services rather than by making an input into the production process.
- Resource allocation is impacted by citizens requesting assistance from public agencies by placing political and fiscal demands on the budgeting system.¹⁹⁹

Ferris' first form of coproduction aligns itself with the author's definition of coproduction used to examine the active and reserve component relationship. "Volunteer" reservists are "actively" and "directly" assisting the USAF's Active Component where their inputs contribute "hard" production; thereby, acting as economic substitutes for active duty personnel in the accomplishment of National

Defense. Therefore, the reserve component is providing coprovision of National Defense. The resource allocation process may then obtain greater fiscal efficiency, in accordance with economic principals, by optimizing the mix between active and reserve components. This critical economic mix between active and reserve components is how the Air Force's Total Force should be "sized and shaped." Coproduction concepts, specifically the institutional coproduction process of coprovision of production, should be used to implement the Total Force Policy to size and shape the military to meet the requirements of the National Security Strategy.

Ferris' second form of citizen involvement is not applicable to the active and reserve component relationship.

However, Ferris' third form of citizen involvement, like Wilson's belief in a participatory citizenry,²⁰⁰ supports the "twice a citizen" perspective where just the participatory act of coproduction is believed important to improve the relationship between the citizen and the institutional considerations of the government.²⁰¹ This form of coproduction is a mechanism to obtain increased political and fiscal responsiveness from the government agency by citizen consumers to facilitate the productive arrangements.²⁰² It impacts policy making and resource allocation decisions by placing increased citizen demand on the system, which the government is expected to respond to by adjusting the supply in the service delivery allocation system.²⁰³

AN EXAMPLE OF SIZING AND SHAPING FORCES OF THE FUTURE

The idea of coprovision may be used with the coproduction framework as a tool to size and shape the United States Air Force. The coproduction framework can be used to compare and contrast the different attributes of RC organizations. Just as IMAs were categorized as individuals involved in ancillary coproduction, or ANG wings as units involved in parallel coproduction, all members and units of the RC could be categorized. This would provide a snapshot in time of the capability and coproduction attributes of the RC. Next, all members and units of the AC could be categorized. By

overlaying this classification with their coproducing RC counterparts, a mosaic of the US force structure would emerge. This would allow for observation of the interrelationships between the mix of AC and RC forces. This accomplishment, in and of itself, would be a valuable tool for the force planner to size and shape the Air Force.

The research shows that the central issue to coproduction is resource allocation . . . who gets the money? Now the amount of money it costs to maintain each element of the mix of AC and RC forces is added to the overlay on the previous two classifications. With the use of computers and the proper computer modeling, the fiscal interrelationships between elements of the current force structure could be highlighted along with the "present" mix of AC and RC forces. From here it is a simple step to simulate the cost differential between different mixes of AC and RC forces to size and shape the Air Force of tomorrow. In our simple example, the economic concepts of substitution and interdependency were used to examine the mix to provide for the demand of 20 Fighter Wing Equivalents.

A SIMPLE EXAMPLE . . . REVISITED

For example, the Air Force has a requirement to provide 20 Fighter Wing Equivalents for National Defense.²⁰⁴ The force mix is presently 13 AC Fighter Wings and 7 RC Fighter Wings in parallel coproduction.²⁰⁵ The Air Force as the generating agency may determine from its institutional considerations it "needs" at least 10 Fighter Wings to provide for its own organic and mission needs. For instance, it needs enough fighter pilots to produce future leaders and staff, and enough "full time" capability to accomplish its real world commitments, such as being forward deployed in Europe, Japan and Korea. The RC Fighter Wings have demonstrated they are as capable as AC Fighter Wings through the Air Force's standardized evaluation procedures and mobilization requirements.²⁰⁶ Using the framework "within the box" of parallel coproduction and employing the "economics" of coproduction to solve the most cost effective mix allows for shaping the force to 10 AC Fighter Wings and 10 RC Fighter Wings. It is of interest to note that RAND has shown that the RC has a capacity of up to 24 aircraft per squadron, but is presently equipped at about 12 to 15 aircraft (because of the down-

sizing).²⁰⁷ RAND estimates an operating cost saving efficiency of up to 30% per aircraft if squadrons could be "robusted up" to 24 aircraft.²⁰⁸ The Active Component may use this added infrastructure capacity to more efficiently manage the "total" infrastructure by moving equipment and assigning active component aircrews to these RC squadrons. Added savings would accrue by taking this same amount of force structure out of the Active Component, along with its very expensive supporting infrastructure. The Air Force knows this and realizes it can save money by changing the force mix, and there has recently been a lot of consideration given to shaping the fighter force to a 50% AC and 50% RC force mix.²⁰⁹

The solution was "out of the box" of parallel coproduction by utilizing the attributes of the Active and Reserve Component relationship of joint coproduction. This added dimension, conceptually allows a policy maker the opportunity to exploit attributes of the coproduction relationship to attain greater qualitative and quantitative efficiencies. Utilization of the framework provides the insight to evolve the solution of adding airplanes to the RC squadrons and have the AC man them. It would be very similar to AMC's Reserve Association program but the RC would own and maintain the airplanes with the AC flying them . . . call it the Active Association program. In our simple example, given enough excess capacity to "robust up" enough RC units to absorb 2 AC Fighter Wings, the framework may identify 8 AC Fighter Wings and 10 RC Fighter Wings in parallel coproduction, and, 2 RC Fighter Wings in joint coproduction. This would meet the demand for 20 Fighter Wing Equivalents for the least cost.

| Comparative Coproduction Framework | | | |
|------------------------------------|---------------------------------------|--------|---|
| Active Component Coprovision | | | |
| | | | |
| Type of Production | Type of Active Participation Activity | | |
| | | | |
| Type of Production | Individual Member | Unit | Member in Direct Cooperation with Reservist |
| | | | |
| Ancillary Coproduction | | | |
| Parallel Coproduction | | 8 FWE* | |
| | | | |
| Joint Coproduction | | | 2 FWE Reserves "own" airplanes |
| | | | |
| Independent Production | | | |

Figure 2.20
Comparative Coproduction Framework
Active Component Fighter Wing Equivalents

| Comparative Coproduction Framework | | | |
|------------------------------------|--|--------|--|
| Reserve Component Coprovision | | | |
| Type of Production | Type of Reserve Participation Activity | | |
| | | Unit | |
| | Individual Reservist | | Reservist in Direct Cooperation with Active Duty |
| Ancillary Coproduction | | | |
| Parallel Coproduction | | 10 FWE | |
| | | | |
| Joint Coproduction | | | 2 Active Associate Wings |
| | | | |
| Independent Production | | | |

Figure 2.21
Comparative Coproduction Framework
Reserve Component Fighter Wing Equivalents

| Comparative Coproduction Framework | | | |
|------------------------------------|--|--------|--|
| | | | |
| | | | |
| Total Fighter Wing Equivalent | | | |
| Type of Production | Type of Reserve Participation Activity | | |
| | | Unit | |
| | Individual Reservist | | Reservist in Direct Cooperation with Active Duty |
| | | | |
| Ancillary Coproduction | | | |
| Parallel Coproduction | | | |
| | | | |
| | | 18 FWE | |
| Joint Coproduction | | | |
| | | | |
| | | | 2 Active Associate Wings |
| Independent Production | | | |

Figure 2.22
Comparative Coproduction Framework
Total Fighter Wing Equivalents

Imagine the cost savings and the increase in capability if the Air Force could develop similar coprovision tools to determine the critical mix of Active and Reserve Components in the size and shape of today's Air Force.

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Section Three

**Assessing the “Fit”
of
Coproduction Theory to the USAF**

Assessing the "Fit" of Coproduction Theory to the USAF

Section Three seeks to assess the *fit* of coproduction theory to the USAF by placing the Total Force Policy in its "real world" context of the complex political interactions between decision makers at the Pentagon and in Washington, D.C. The purpose of the assessment is to observe the policy makers' perception of the Air Force's Total Force Policy. Given the environment of the National Security Strategy decision making which has been developed from Section One and using the three building blocks of coproduction concepts from Section Two; (1) a redefined concept of coproduction, (2) the Comparative Coproduction Framework, and (3) the USAF Institutional Coproduction Process, the background is set to assess the efficacy of coproduction as a policy making tool to size and shape the USAF's Total Force.

To assess the efficacy of the "fit" of coproduction theory to "size and shape" the USAF's Total Force, a normative examination of the modified coproduction propositions will be used. These propositions are:

- Proposition 1: Reserve Component coproduction is positively associated with higher levels of services provided for national defense.
- Proposition 2: Reserve Component coproduction is associated with lower budgetary costs for provision of National Defense.
- Proposition 3: Reserve Component coproduction enhances the responsiveness of USAF service delivery to the needs and preferences of citizens for National Defense.
- Proposition 4: Reserve Component coproduction increases citizen knowledge and acceptance of military technology and constraints.
- Proposition 5: Reserve Component coproduction of services may increase other forms of citizen awareness and participation in government.

The focused, or nonschedule-structured interview¹ is used to observe the Total Force policy makers and takes advantage of the four characteristics:

- The interview takes place with decision makers known to have been involved in Total Force policy making.
- The interview refers to Total Force Policy issues that have been studied prior to the interview.
- The interview proceeds on the basis of an interview guide specifying the topics related to the research.
- The interview is focused on the subjective experiences of decision makers regarding Total Force Policy implementation in the Air Force.²

The nonschedule-structured interview allows the structure of specific issues to be studied and provides a common baseline for all those interviewed; while it also allows those being interviewed considerable latitude in expressing their perspective on the issues.³ This gives the interviewer the ability to observe details of personal reactions and to explore specific topics, in more detail, providing a better understanding of the subjective experiences expressed by the respondents.⁴ The interviewer, having previously studied the topic, is able to guide the interview in the needed direction to help clarify any inconsistencies in responses.⁵

Two distinct sets of questions may be asked. The first set contains normative questions as to the "existence" of the coproduction process in the Air Force. The second set consists of descriptive questions concerning the "health" of the coproduction process. Graphically, a matrix of the results shows if coproduction concepts are or are not used in determining the present USAF Total Force Policy. It also shows whether the coproduction relationship is either healthy or not healthy.

| Research Decision Matrix | | |
|--|---------------------------|----------------------|
| | Existence of Coproduction | Healthy Coproduction |
| USAF may be used as a model of Total Force Policy Coproduction | Yes | Yes |
| USAF may not be used as a model of Total Force Policy Coproduction | No | No |

Figure 3.1
Decision Matrix

The propositions are used as the mechanism to observe the responses from the interviews (with other documentation) to test the efficacy of the *fit* of coproduction concepts as a policy making tool to size and shape the USAF's Total Force.

Proposition 1: Reserve Component coproduction is positively associated with higher levels of services provided for national defense.

. . . You can call up a member from the Reserve or Guard, integrate him into the wartime plans and you will never know the difference.

*Major General Donald W. Shepperd
Director, Air National Guard⁶*

It is "nearly impossible to find the margin between us and the active force. Together we form a seamless piece of cloth that is bigger, stronger, and more durable than the threads from which it is made.

*Major General Robert A. McIntosh
Chief, Air Force Reserves⁷*

According to Brigadier General John F. Harvey, "We fight one Air Force and the Air Force counts on whatever part of that is comprised by Reservists."⁸ This idea of Total Force Policy has been evolving within the Air Force since the early 1970s and operationally accepted since the 1980s.⁹ Air Force Leadership has embraced the concept of Total Force and has shown a strong commitment to integrating the Reserve Component into this concept to make Total Force a reality.¹⁰ Not only is the concept of a Total Force important, but it is also imperative "that the Total Force itself be overwhelmingly lethal" as stated by General Harvey.¹¹

To ensure that the
what it needs and
out to do, the Active
committed to providing

Research Observation-
The Active Component
takes "ownership" for
Reserve activities.

Reserve Component has
accomplishes what it sets
Component has been
training, the latest

equipment and most of all a sense of credibility to the Reserves.¹² There is not only a strong sense of acceptance of their coproducing fellow reservists among Air Force Active Duty Personnel, but strong support for and commitment to success of their mission as well, which is expressed by every Senior Leader the author interviewed.¹³ It is as if they have seen the future and they are convinced the Reserves will play a major role in that future. General Shepperd states:

...It is my firm belief that the Guard will either be bigger than today, or a bigger part of the pie that is left. In either case, the nation will be forced to rely more on the citizen soldier tomorrow than it does today - national priorities and budgets require it -the world geopolitical situation permits it. In short, we must return back to our history and culture as a militia nation.¹⁴

According to General Harvey, it is this "element of leadership commitment early on that made a critical difference."¹⁵ Such trust and good will among team members begets more trust and good will and combines into a well oiled machine -- a well oiled fighting machine --

One Air Force -- one "lethal" Air Force, as recently demonstrated at the beginning of this decade in the Gulf War.¹⁶

National Defense is served by the provision of higher levels of services through the coproduction of forces - the Active Component in combination with the Reserve Component. Stephen Duncan, former Assistant Secretary of Defense for Reserve Affairs, believes "what is credible is to see an Air Guardsman fly and beat the socks off the Active Duty Guy."¹⁷ The implication is that it is important that the other services stop seeing the Guard and Reserves as inferior arms of their own services and begin to view them in the light which the Air Force sees and uses them.¹⁸ They are equal, if not superior (based on experience) warriors who bring a civilian balance to the coproduction equation.¹⁹

Without the equipment and leadership of the AC, the RC would be ineffective;²⁰ and, without the innovation, experience and increased manpower which the RC provides, the AC would be too expensive and mired in OPTEMPO problems reducing the quality of their work life.²¹ The Active Component and the Reserve Component read off of the "same sheet of music."²² The RC must meet AC inspection requirements.²³ The Reserve Component must "reflect the AF Mission" according to General Harvey,²⁴ and must "mirror the Active Component" according to Mr. Wayne Gracie,²⁵ Chief Policy Integration Division, Office of Air Force Reserve. It must become integrated into the Air Force. "The Air Force integration of its Reserve Component into Total Force operations is the acknowledged model in DoD . . . " states General McIntosh.²⁶ He continues; "Our separate but complementary resources contribute to the success the Total Force enjoys."²⁷

Research Observation-
There is "one rule book"
for both the Active and
Reserve Components.

General Shepperd states it another way:

I am also proud of our relationship with the active Air Force. The Air Force organizes, trains and equips us. When called, they know we will come. When we get there, they know we will be able to do the job. In the Air Force, despite competition for resources, we are a team. We know each other. We fight and train together and support each other for the good of the nation.²⁸

Together, the two work hand in hand in peacetime and side by side on the battlefield to provide for the Nation's Defense.²⁹ The AC has tasked the RC with realistic missions and honored them by letting them realistically carry them out. "Reservists can do every job comment is heard over and impossible to distinguish between the work of the RC and the AC. Integration has long since been a topic for debate and discussion and has now become "a way of life."³¹ The Total Force has come to the Air Force and the Air Force has become a shining example of what the Total Force means.³² According to Stephen Duncan, "the Air Force is light years ahead of the other Services."³³ One reason for this accomplishment is the Air Force's ability and willingness to embrace the ideas contained within coproduction theory, regardless of what it may call them.

Research Observation-
The USAF provides
the input of "realistic
missions to the RC.

prove that they (the RC) can General Shepperd says, they give us."³⁰ The over again that it is

How did the Air Force get where it is today in terms of integrating Active and Reserve components? General Ronald Fogleman, Chief of Staff of the Air Force, believes the process is based on *trust*.³⁴ General Harvey attributes *trust between the parties* to:

- RC proven competence;
- Practice . . . where any number of instances demonstrated mutual trust;
- No major failures;
- AC has a *certain respect* for reserve Component members;
- AF Active Component Leadership *bought into* this (idea) very early on.
- AF *made it a requirement* that their subordinates *buy in*.³⁵

The respect the AC has for Reserve Component members is reflected by General Fogleman when he says, "We have a very intelligent force, and the more we share with those folks, the more they will give back to us."³⁶ General Fogleman also believes, "This has been my argument throughout the entire time that I've talked about this idea of whether or not you want to maintain two major regional contingencies worth of force structure or whether you can do it a different way and look at a different use of military manpower -- which you equate to more use of the Guard and Reserve based on mobilization time lines and spin up."³⁷ He is not the only one to see the importance of the alliance between the two components. "It supports the way we do business -- we equip, train, and deploy as a team," according to General McIntosh.³⁸ Citing the Active Component's respect for the Reserves, General Shepperd points out that "the Air Force is the only Service to have an active unit commanded by a reserve officer."³⁹ Lieutenant Colonel Robert Leeker, a squadron commander in the ANG, succinctly states, "they (both components) gain in their joint training. They gain in their 'net worth'."⁴⁰

Research Observation-
The USAF culture
provides the input of
"caring" to the RC.

The preponderance of anecdotal observations demonstrates the "fit" of coproduction concepts within the "healthy" relationship between the USAF Active and Reserve Components.

Proposition 2: Reserve Component coproduction is associated with lower budgetary costs for provision of National Defense.

Start with the presumption that each of those missions can be accomplished by a Reserve unit because it is cheaper.

*Stephen M. Duncan Assistant Secretary
of Defense for Reserve Affairs⁴¹*

The Air Force has seen the bottom line and understands what that means in terms of manpower or AC/RC coproduction mix ratios.⁴² There is a problem extrapolating too far however, in that most of the equipment and its attendant costs are associated with the Active Component.⁴³ General McIntosh points out, "...one of the reasons the Reserve is less expensive than the Active Force is

on an Active base and cost of base support. when we have to pay the Another problem is that

Research Observation-
The RC provides the
output of increased
mission "effectiveness" for
the USFA.

that usually we are tenants don't have to pay the high We lose this advantage base-support bill."⁴⁴ Congressional Legislation,

such as H.R. 1530 and 1532, has associated with it higher costs that will either directly or indirectly change the bottom line.⁴⁵

Nevertheless, the jury is in. National Guard units can get the job done from anywhere between 25 to 40 percent less than regular military units.⁴⁶ It is estimated that the Reserve Component can perform the same job as the Active Component at a 25 to 30 percent cost savings.⁴⁷

The Guard and Reserve provide more than one-third of Air Force total mission capability for less than 15 percent of the total Air Force budget.⁴⁸ According to a Congressional Budget office report, "reserve ships are 20 percent less costly to operate than active ships; air units 30 to 40 percent; and simple ground combat units 75 percent less."⁴⁹ As Colonel Ron Bath states, "We can do a broader range of things for less money."⁵⁰ And "there is a revolution in technology that is allowing us to do alot more with alot less," according to General Shepperd, "yet our mind set tells us we still need fighter wings."⁵¹

It is this "mind set" that calls for thinking out of the box, for taking the puzzle apart, reshaping and resizing the pieces and putting them back together in a new way, a new less

expensive way. This means rethinking everything from the need for military bases (fighter wings) to who gets equipment and who provides the manpower.⁵² "The one thing we have never done since the end of the Cold War is we have never stood back and done a fundamental assessment of manpower utilization in this country like we have after every other conflict in the 20th Century. We're missing the boat by not having done that," states General Fogleman.⁵³

There are some complaints that the AC and RC budgets are not based on a true acquisition process, but rather that it is a process that is political in nature and by definition circuitous.⁵⁴ General Harvey makes note of this by saying, "it forces people who testify to Congress to make some very awkward testimony."⁵⁵ It feeds the worst instincts of the Congressmen. It makes them go pork-barrel and Congressmen are already pork-barrelish."⁵⁶

Stephen Duncan, author of Citizen Soldier, points to the same problem citing the Active Component's habit of not asking for funds for the Reserve Component, expecting Congress to give them (the RC) what they (the AC) don't ask for.⁵⁷ Wayne Gracie believes that Congress is "very good at providing supplemental appropriations and reprogramming dollars."⁵⁸ Colonel Ron Bath describes the Reserve perspective as being, "Use us more! You don't want to use us because it makes you feel less relevant which threatens your existence."⁵⁹ Elaine Sharp (see Section Two of this paper) identifies this reluctance to share "turf" on the part of the professional service agents who hold the dominant model perspective.⁶⁰ Even when the service agent is not concerned about job security, he or she may be threatened by the citizen volunteer's disruption of their organizational procedures or by a perceived weakening of their legitimate professional autonomy.⁶¹

This is not to say the threat isn't real. Active Duty personnel in the Air Force have gone from 608,200 in fiscal year 1986 to 381,000 in fiscal year 1997.⁶² The Air National Guard has remained relatively steady over the same period at about 108,000 people and the Air Force

Reserve has also remained relatively steady at around 73,000.⁶³ Putting capability into the reserves was a planned way of doing business after the cold war and an underlying philosophy of the Air Force Strategy contained in Global Reach and Global Power.⁶⁴ The proportional amount of the mission is increasing for the Air Force Reserves under this philosophy.⁶⁵ It seems to be a fact of life for the Air Force and one which makes sense from many perspectives, not the least of which is monetary -- it's cheaper, thereby freeing up money for much needed force modernization.⁶⁶

Many senior leaders infer that the reason the Reserve Component works as well as it does within the force structure is because of the infusion of money.⁶⁷ Colonel Bath, General Fogleman and General

perspective to some degree.
primary reason for Total

General Fogleman and

Research Observation-
The USAF leadership
provides the input of
"necessary resources."

McIntosh all share this

Colonel Bath thinks it is the
Force Policy success,⁶⁸

General McIntosh cite it as

proof the Air Force takes care of its own . . . "with support and funding."⁶⁹ The Air Force spends approximately 6 times as much money on one-fourth the number of reservists as the Army.⁷⁰ Still with all the money the Reserves receive, there is a 30 million dollar shortfall each year . . . "money that is needed to meet requirements," according to Dan Kohner.⁷¹

Using the same logic that makes coprovision of services work, General Fogleman states, "You better have the right force structure or you won't be able to support (afford) modernization."⁷² With all the emphasis on modernization, from the JCS with the QDR to Congress, it is imperative that all Services get the AC/RC coproduction mix ratios right.⁷³

The preponderance of anecdotal observations demonstrates the "fit" of coproduction concepts within the "healthy" relationship between the USAF Active and Reserve Components.

Proposition 3: Reserve Component coproduction enhances the responsiveness of USAF service delivery to the needs and preferences of citizens for National Defense.

When do you use military force? I think that the key to having American public support (is) what you do is that you have a construct that defines when you use military force as something that is in the interest of the nation and that's how you mobilize the force.

*General Ronald R. Fogleman,
Chief of Staff of the Air Force⁷⁴*

What do American citizens want in the way of national defense? There is no question that the American public supported the U.S. military's participation in the Gulf War.⁷⁵ How much of that was due to the fact that record numbers of reservists (America's grass root citizen-soldiers) participated in that war can only be surmised. Had reservists played a part in the Viet Nam War it is likely the war would have taken a much different path.⁷⁶ America is not fond of sending its sons and daughters off to war, and does so reluctantly and only if it is to defend something the American public views as being of utmost importance.⁷⁷ As General Shepperd states, "The American public isn't going to put up with you spending their money and killing their kids when it becomes visible to them."⁷⁸

Research Observation-
The Reserve Component
becomes a "stakeholder"
in mission success.

General Shepperd also believes "we should become a nation that takes part in decisions and military service."⁷⁹ He goes on to state, " We have become, in the last 50 years, a nation of large standing military forces that are stationed overseas, this in a country that reviles large standing military forces."⁸⁰ He points out that we began as a nation of individual citizens and strong states, as Jefferson intended, and continued along those lines until the end of World War II. At this point, he says, "The Federal Government became strong and gained supremacy over

the states and the people. We pretty much make the right decisions for the right reasons -- for the security and welfare of the nation."⁸¹

He feels that at the present time we have "a window of opportunity" in which to effect change...to resort to our roots as a militia nation.⁸² He is joined in this perception by both Generals Fogleman and Harvey who believe the United States "is a militia nation." According to General Harvey, a militia member "by definition, is any citizen sailor, soldier or marine who takes up the military as a part-time endeavor."⁸³ A militia nation has at its core, the highest regard for the "will of the people" who comprise that nation.⁸⁴

General McIntosh believes citizen support of national objectives is strengthened by Reservists who often serve at units near their hometowns for an entire career, building an important bridge to the community.⁸⁵ Reservists are in touch with the "will of the people" partly because they help "comprise" the people and because they are more closely associated with the people than many of their active duty counterparts. They interact within their communities as churchgoers, taxpayers, and community leaders.⁸⁶ Being familiar with and understanding the needs and preferences of citizens for National Defense is one of the most important ways in which Reserve Component coproduction enhances the USAF service delivery to those needs.⁸⁷

Research Observation-
The RC provides the output
of increased "quality of work
life" for the USAF.

As Colonel Ron Bath states, "the (Guard and Reserves) are spread out across (thousands of) cities."⁸⁸ In a sense, reservists are "ambassadors of good will" who bring the will of the people to the military and the larger political process, and, the message of the military and the government to the people.

The preponderance of anecdotal observations demonstrates the "fit" of coproduction concepts within the "healthy" relationship between the USAF Active and Reserve Components.

Proposition 4: Reserve Component coproduction increases citizen knowledge and acceptance of military technology and constraints.

And I will tell you that one of the things I think we are in danger of losing with an All Volunteer Force, is our connectivity with our public, and that Guardsmen and Reservists are one of your best ways to stay tied back in a community.

General Ronald R. Fogleman⁸⁹

According to Stephen Duncan, "people who join the reserves tend to be pretty motivated people. They are the community leaders."⁹⁰ As such, they interact with the citizens in their communities, increasing their knowledge and awareness of USAF technology and constraints.⁹¹

As Active Duty Personnel decrease, fewer and fewer everyday citizens are exposed to military members.⁹² As bases close, communities lose their ties to the military. And as decades pass since the end of the draft, fewer and fewer Legislators have prior military service which deprives the country of a certain firsthand knowledge and understanding of the workings of the military.⁹³

Research Observation-
The RC provides the
output of increased
"balance" for the USAF.

Reserve Component coproduction helps to bridge this gap as they educate their fellow citizens about the capabilities and constraints of the organization they work with, for the people -- the USAF. Interactions take place between citizen soldiers and citizens as humanitarian efforts are supported on the domestic front, from earthquakes to weather reconnaissance to aerial fire fighting, counter-drug activities and rescue operations.⁹⁴

However, there is another side to the coin. Because the citizen soldiers do have other jobs and usually have families they are concerned about, it is important that those

factors be taken into consideration or a scenario may be one that Stephen Duncan has observed, "They finally got burned out. Their family came first and they chose Vice President of their company over Colonel."⁹⁵ He also states it another way, "These are husbands and wives who have jobs, but don't presume upon their time because they're a cheap replacement for the active duty force -- a cheap labor pool."⁹⁶

Perhaps General Harvey says it best, "The reserve components have been very influential and helpful as conveyors of civilian methods and ideas, as professional collaborators, and as conduits to inform and defend the Air Force position both with politicians and the people of the country."⁹⁷

The preponderance of anecdotal observations demonstrates the "fit" of coproduction concepts within the "healthy" relationship between the USAF Active and Reserve Components.

Proposition 5: Reserve Component coproduction of services may increase other forms of citizen awareness and participation in government.

I believe the United States of America is a militia nation...always has been, always will be. Politicians understand this. Now, alot of people refuse to accept that in the 20th Century, but the folks who are in touch with America, and the American citizenry know and understand this and they are not primarily people who wear the uniform. They are the politicians.

General Ronald R. Fogleman⁹⁸

Politicians understand that this country is run by its citizens, through an intricate maze of politics, their right to vote and ultimately, the people they elect to represent them. General Shepperd describes the process at the organizastional level. He says, "Every Association has their charter. Their charter is to look after its members. It's called representative democracy. Balance the needs of the military with the needs of its constituencies. The role of all these people

is very specific. The Association's role is to protect its members. Congress's role is to sort all of this out. If Congress fails, they get thrown out. If we all fail, our nation suffers."⁹⁹

It is important to understand that the Senior Leadership of the United States of America views the nation as a "militia nation."¹⁰⁰ The emphasis of the Reserve Component specifically and the Air Force Total Force is "to serve."¹⁰¹ They do this through training which results in "by-products that support or improve activities in the infrastructure of our nation."¹⁰²

Anyone who has ever represented America abroad whether it be as an ambassador, state department representative, member of a Mil to Mil Program, or as a Marine guarding a U.S. Embassy, knows the pride that is felt and the desire to do everything that is humanly possible to ensure that America continue on its present course.¹⁰³ Perhaps that is why General Shepperd says, "The value of this building (the Pentagon) is to make sure almost nothing happens. Unless it is incremental or of super importance."¹⁰⁴

Research Observation-
The Reserve component
exists "to serve" the USAF.

And the value of democracy is perhaps not understood quite so well by anyone as by he or she who may have to give their life to defend it. These are the people working side by side in terms of Reserve Component Coproduction who are contributing to programs such as Operation Galileo where reservists act as role models to "motivate participants to stay in school, and to inspire them to believe they can set and attain personal and professional goals."¹⁰⁵ Other programs such as Reserve Generation,¹⁰⁶ Starbase¹⁰⁷ and TRANSAM/Walking Shield,¹⁰⁸ cannot help but expose huge microcosms of the nation to the work of the Reserve Component.¹⁰⁹

It is impossible to say how many people will be inspired by such programs to take part in the governing of their nation, but it is probably fair to say that many will. It is the nature and the by-product of human interaction to follow in the footsteps of someone admired. However, because senior leaders the author interviewed did not speak at length to this topic, it

will not be inferred that this proposition demonstrates the "fit" of coproduction concepts within the "healthy" relationship between the USAF Active and Reserve Components. This proposition deserves further indepth investigation.

Results from the Research

Anecdotal evidence from the nonschedule-structured interviews of Total Force Decision Makers shows a healthy use of coproduction concepts in the Air Force's implementation of the Total Force Policy. The outcome of the assessment is that the judgment and experience of the Policy Makers endorses the existence of coproduction concepts as an important way the Air Force's Total Force does its work. The assessment demonstrates the "fit" of coproduction theory to the USAF's Active and Reserve Component relationship. The primary purpose of this research is substantiated -- coproduction theory may provide a more adequate definition and a better understanding of the Total Force Policy.

| Research Decision Matrix | | |
|--|---------------------------|----------------------|
| | Existence of Coproduction | Healthy Coproduction |
| USAF may be used as a model of Total Force Policy Coproduction | Yes | Yes |
| USAF may not be used as a model of Total Force Policy Coproduction | | |

Figure 3.2
Results from the Research Decision Matrix

The relationship between the Active and Reserve Components has largely been harmonious because of the USAF's use of coproduction concepts. Demonstrated RC performance, common values and

beliefs, with Active Component leadership commitment combined with Reserve Component autonomy, provides the harmony in their relationship which mitigates the possibility of overtly opportunistic behavior by either component. The research suggests ten "lessons learned" from the coproduction interactions that may contribute to the good "health" of this relationship:

- The Reserve Component exists "to serve" the USAF.
- The Active Component takes "ownership" for Reserve activities.
- The Reserve Component becomes a "stakeholder" in mission success.
- There is "one rule book" for both the Active and Reserve Components.
- The USAF leadership provides the input of "necessary resources" to the RC.
- The USAF provides the input of "realistic" missions to the RC.
- The USAF culture provides the input of "caring" to the RC.
- The RC provides the output of increased mission "effectiveness" for the USAF.
- The RC provides the output of increased "balance" for the USAF.
- The RC provides the output of increased "quality of work life" for the USAF.

CALL FOR ACTION

The research prompts the next step -- a "call for action" for more study using coproduction concepts to size and shape the Total Force to meet the military requirements of the National Security Strategy. The need exists to develop a systematic structure to apply the Air Force's "lessons learned" to the DoD Total Force Policy. Follow-on research should examine the application of coproduction concepts upon Total Force Policy with two distinct but interrelated levels of research: the observational-empirical level and the conceptual-theoretical level of investigation.

Observational-empirical level: Another purpose of this assessment is to propose a more systematic and logical approach using coproduction concepts to determine the most effective mix of Active and Reserve Components in the Air Force's force structure. Using normative coproduction concepts and rudimentary coproduction economic theory, a simple Comparative Coproduction Framework is developed. It is used with a simple illustration to demonstrate the potential of this approach to more effectively shape

the USAF's force structure. This example just introduced the idea of using coproduction theory to size and shape military forces. Much work with empirical studies, pilot projects, analytical models, etc., needs to occur to further this idea into meaningful tools for the force planner to use to structure forces. More study needs to occur at the observational-empirical level of research before coproduction may provide for the second purpose of this research -- Coproduction theory may provide better guidance to the Service's force structuring community.

Conceptual-theoretical level: The last purpose of this assessment is to propose that decision makers utilize coproduction concepts in the design, justification, and implementation of Total Force Policy. Normative approaches from Section One of the Research suggests the use of a "top down" conceptual model to link the National Security Strategy through the two tenets of Total Force Policy: Seamless integration, and, sizing and shaping the Total Force, with coproduction concepts. The "fiscal-budget-based" approach to resource allocation is observed to be the dominant DoD institutional approach to sizing and shaping the Total Force. Section Two evolves these two ideas into the USAF Institutional Coproduction Process where the Air Force's provision of National Defense is the sum of the production outputs of both the Active and Reserve Components. Ultimately, the USAF Institutional Coproduction Process is essentially a politically driven process between internal and external institutions and actors. Many of these linkages are tenuous, and require better conceptualization. Of special note is the Total Force Policy tenet of seamless integration which should be studied as a companion topic to this research. More research needs to occur before the conceptual-theoretical level of coproduction may provide for the last purpose of this research -- Coproduction concepts may be used to assist the policy maker in the sizing and shaping of the Total Force to meet the military requirements of the National Security Strategy.

NOTES

1. Interview checklist:

OUTLINE

Thank You!

Seek Your Help & Insight

- Today's Resource Allocation

- PPBS
- TOA

- Tomorrow's Resource Allocation

- Title XXII
- Global Engagement
- Long Range Planning

- Model to Think by:

- Coproduction
- Cooperative Service
- Other ???

- Issues

- Operating Support Fund/OPTEMPO
- "NOW" Regional Contingencies
- RC Accessibility

- RFPB Recommendations

- Force Requirements/JCS Determined
- Service Chiefs Accountable
- Eliminate Cultural/Structural Barriers

TOPICS

- TOA

- Based on Competition
- NGREA/Political
- AC Budget/RC 30M Shortfall

--- 116M per year to RC

- 20M for OOTW
- MilCon Reprogramming Increase
- "Compensating Leverage"
- RC Less Expensive
- RC More Experienced
- Crew Ratio
- Flying Hours

--- "You will fly the program"

- Title XXII: Reserve MAJCOM

- FYDP Equipment/MilCon
- Report to Congress
- RC Acquisition Program
- Procurement Accounts

--- "100%" Mission Question

- OPTEMPO

- Training VS "Real World" Ops
- 120 TDY Goal for AC

-- 1900 + 600 RC Man-years

- AFR Provides More Support ANG
- "Realistic Training"
- "Volunteerism"
- "Integration" w/AC

- Sizing and Shaping

- End Strength of Each Component
- 50/50 Mix Option
- Combat "Roles and Missions"
- How Early RC Deployment
- CINC's Involvement
- RC in CINC's Plans
- New Missions

- PPBS

- FORSIZE
- Resource Allocation Team Structure
- MAJCOM to "Serve" CSAF/CINC

- Culture

- "Health"
- Integration

Help!

Documents and POCs

-- Differences

-- "Citizen-Warrior"

2. These four characteristics were evolved from nonschedule-structured interview characteristics in David and Chava Nachmias' book: Research Methods in the Social Sciences, 3rd Edition. New York: St. Martins Press, 1987, 237.

3. David Nachimias and Chava Nachimias, Research Methods in the Social Sciences, 3rd Edition. New York: St. Martins Press, 1987, 237.

4. Ibid.

5. Ibid.

6. Interview with Major Donald Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

7. Robert A. McIntosh, Chief, Air Force Reserve, as stated in AFR Command Review: Air Force Reserve Commander's Review of 1995, 10.

8. Interview with Brigadier General John F. Harvey, Director Strategic Planning, U.S. Air Force Reserves, and Hoffman Building. Alexandria, VA: 27 March 1997.

9. Ronald R. Fogleman, Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997.

One of General Fogleman's themes during the presentation is to trace the importance of America as a "militia nation." He presents an Air Force that operationalized the Total Force the Total Force concept at the end of the cold war by placing substantial amounts of force into the Reserve Component in order for the Air Force to modernize its equipment.

10. Ronald R. Fogleman, Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997. General Fogleman mentioned Secretary of the Air Force Rice's commitment, along with other senior Air Force leaders to operationalize the Total Force concept after the cold war. Gilstad, Claire J., Reserve Officers Association Director, Air Force Affairs, Interview with Colonel (Ret) Gilstad, One Constitution Avenue, Washington DC, A30 December 1996.

Colonel Gilstad mentions that former Chief of Staff of the Air Force General Larry D. Welch made the conscientious decision to emphasize that active duty commanders are responsible for the performance of reserve organizations under their command. This started the trend throughout the 1980's of the Active and Reserve Components to work better together. It also started the trend of senior Air Force Leadership's support of the reserve component.

11. Interview with Brigadier General John F. Harvey, Director Strategic Planning, U.S. Air Force Reserves, Hoffman Building, Alexandria, VA: 27 March 1997.

12. Most interviewers agree that the Active Component has done a good job at providing resources for the Reserve Components. General Shepperd observes the relationship in more competitive terms while General McIntosh observes a more cooperative relationship.

Colonel Baker, Office of the Assistant Secretary of Defense for Reserve Affairs, Assistant Director for Mobilization, observes more of an adversarial environment where the parties are fighting over finite fiscal resources. Colonel Gilstad of the Reserve Officers Association believes the Air Force periodically needs prodding through Congress to provide needed Reserve resources, especially in the area of military construction.

13. Every person interviewed believes the Air Force, of all the major services, has done the best job of integrating its Reserve Component into daily operations. One common theme for the success of this integration is the Reserve contribution to the day-to-day mission of the Air Force. One example that was mentioned by many of those interviewed was the "standing up" of a new AWACS Reserve Associate Unit to alleviate some of the hardships of Active Duty AWACS crews being continuously deployed on temporary duty.

14. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

15. Interview with Brigadier General John F. Harvey, Director Strategic Planning, U.S. Air Force Reserves, Hoffman Building, Alexandria, VA: 27 March 1997.

16. Ronald R. Fogleman, "A New Concept of the Total Force," Defense Issues, Volume 10, Number 13, 1995, 1-4. The general theme of this article is the idea that trust and teamwork between all members of the Total Force team; active duty, Guard, Reserve, Civilians and industry, working together get the best results for the Air Force and America.

Interview with Brigadier General John F. Harvey, Director Strategic Planning, U.S. Air Force Reserves, Hoffman Building, Alexandria, VA: 27 March 1997. General Harvey emphasizes the "One Air Force" providing "lethal" capability.

17. Interview with Stephen M. Duncan, former Assistant Secretary of Defense for Reserve Affairs, Sheraton Suites, Alexandria, VA: 22 April 97.

18. In most of the interviews, it is perceived that the United States Army has systemic problems in integrating its Active and Reserve Components.

19. The ability of Reserve Component pilots is universally held in high esteem by both the Active and Reserve Component leadership. In many of the interviews, it was mentioned that most of the pilots have served on at least one active duty tour before joining the Reserves, that the Reserve Component pilots have more flying experience, and that pilots in the Reserve Component often stay in the same flying unit for longer periods of time than their Active Component counterparts.

20. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996.

21. Ronald R. Fogleman, "Air Force in Operations Other than War," Defense Issues, Volume 10, Number 1, 1995, 1-4.

22. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

23. The requirement of the Reserve Component to train to the same standard as measured by the Air Force's Operational Readiness Inspections (ORI) is emphasized by many of those interviewed as an important element to the integration of the Reserve Component into the Air Force. Across the Board, Reserve participants are held to the same standards as their Active Component compatriots.

24. Interview with Brigadier General John F. Harvey, Director Strategic Planning, U.S. Air Force Reserves, Hoffman Building, Alexandria, VA: 27 March 1997.

25. Interview with Wayne R. Gracie, Office of Air Force Reserve, Chief Policy Integration Division, The Pentagon, Washington DC: 2 January 1996.

26. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996.

27. Ibid.

28. Donald W. Shepperd, "Cyber-Guard," National Guard, April 1997, 37.

29. Ronald R. Fogleman, "Air Force in Operations Other than War," Defense Issues, Volume 10, Number 1, 1995, 1-4.

30. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

31. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996.

32. Interview with Stephen M. Duncan, former Assistant Secretary of Defense for Reserve Affairs, Sheraton Suites, Alexandria, VA: 22 April 97.

33. Ibid.

34. Ronald R. Fogleman, "A New Concept of the Total Force," Defense Issues, Volume 10, Number 13, 1995, 3.

35. Interview with Brigadier General John F. Harvey, Director Strategic Planning, U.S. Air Force Reserves, Hoffman Building, Alexandria, VA: 27 March 1997.

36. Ronald R. Fogleman, Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997.

37. Ibid.

38. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996.

39. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

40. Interview with Lieutenant Colonel Robert L. Leeker, ANG student to the Naval War College, Newport, RI: 25 March 1997.

41. Interview with Stephen M. Duncan, former Assistant Secretary of Defense for Reserve Affairs, Sheraton Suites, Alexandria, VA: 22 April 97.

42. Interview with Daniel Kohner, Office of the Assistant Secretary of Defense for Reserve Affairs, The Pentagon, Washington DC: 26 December 1996. The embellishment of placing it in terms of coproduction theory is added by the author.

43. Interview with Wayne R. Gracie, Office of Air Force Reserve, Chief Policy Integration Division, The Pentagon, Washington DC: 2 January 1996.

44. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996.

45. Interview with Wayne R. Gracie, Office of Air Force Reserve, Chief Policy Integration Division, The Pentagon, Washington DC: 2 January 1996.

46. Estimate is derived from comments obtained during interviews and the following documents obtained after the interviews: AFR command Review and Air Force Reserve obtained from General McIntosh; Reserve Component Programs: Fiscal Year 1995 Report of the Reserve Forces Policy Board, obtained from Colonel Templon. Other documents were used to substantiate the estimate: Assessing the Structure and Mix of Future Active and Reserve Forces: Assessment of Policies and Practices for Implementing the Total Force Policy, Santa Monica, CA: RAND December 1992. Assessing the Structure and Mix of Future Active and Reserve Forces: Cost Estimation Methodology, Santa Monica CA: RAND December 1992. Guard and Reserve Participation in the Air Mobility System, Santa Monica, CA: RAND March 1993.

47. Ibid.

48. Office of the Secretary of Defense, Reserve Component Programs: Fiscal Year 1996 Report of the Reserve Forces Policy Board (Washington DC: 24 March 1997), 17.

49. Edward J. Philbin, "The Guard Provides a Force Structure Solution," National Guard, April 1997, 96.

50. Interview with Colonel Ronald Bath, Senior Policy Advisor, Commission on Roles and Missions of the Armed Forces, Gannet Towers, Washington DC: 28 March 1997.

51. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

52. Ibid.

53. Ronald R. Fogleman, Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997.

54. The interviews highlight the political nature of the National Guard and Reserve Equipment Appropriations (NGREA) where Congress appropriates money for the Reserve Components outside the DoD Budget request. The Air Force has been observed of "gaming" the system by not asking for needed appropriations because it believes that Congress would appropriate the funds anyway under NGREa.

55. Interview with Brigadier General John F. Harvey, Director Strategic Planning, U.S. Air Force Reserves, Hoffman Building, Alexandria, VA: 27 March 1997.

56. Ibid.

57. Interview with Stephen M. Duncan, former Assistant Secretary of Defense for Reserve Affairs, Sheraton Suites, Alexandria, VA: 22 April 97.

58. Interview with Wayne R. Gracie, Office of Air Force Reserve, Chief Policy Integration Division, The Pentagon, Washington DC: 2 January 1996.

59. Interview with Colonel Ronald Bath, Senior Policy Advisor, Commission on Roles and Missions of the Armed Forces, Gannet Towers, Washington DC: 28 March 1997.

60. Elaine Sharp, "Toward a New Understanding of Urban Services and Citizen Participation: the Coproduction Concept," Midwest Review of Public Administration 14 (June 1980), 117.

61. Ibid., 118.

62. Interview with Daniel Kohner, Office of the Assistant Secretary of Defense for Reserve Affairs, The Pentagon, Washington DC: 26 December 1996.

63. Ibid.

64. Ronald R. Fogleman, Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997.

65. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

66. Ronald R. Fogleman, Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997.

67. The general consensus in the interviews is that the Air Force is willing to spend money on the Reserve training, equipment, etc., because of the high return in capability. While disagreements over the funding levels occurs -- it most often occurs "on the margin" with the acknowledgment that the Reserve Component has a "place at the table," as stated by General McIntosh.

68. Interview with Colonel Ronald Bath, Senior Policy Advisor, Commission on Roles and Missions of the Armed Forces, Gannet Towers, Washington DC: 28 March 1997.

69. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996.

70. Interview with Daniel Koher, Office of the Assistant Secretary of Defense for Reserve Affairs, The Pentagon, Washington DC: 26 December 1996.

71. Ibid.

72. Ronald R. Fogleman, Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997.

73. Ibid.

74. Ibid.

75. Interviews with Lieutenant Colonel Donald M. Boone, Lieutenant Colonel Robert L. Leeker, and Lieutenant Colonel Karen L. Wingard, ANG students to the Naval War College, Newport RI: 25 March 1997.

76. Ibid.

77. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

78. Ibid.

79. Ibid.

80. Ibid.

81. Ibid.

82. Ibid.

83. Interview with Brigadier General John F. Harvey, Director Strategic Planning, U.S. Air Force Reserves, Hoffman Building, Alexandria, VA: 27 March 1997.

84. Ronald R. Fogleman, Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997.

85. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996.

86. Interview with Stephen M. Duncan, former Assistant Secretary of Defense for Reserve Affairs, Sheraton Suites, Alexandria, VA: 22 April 97.

87. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997. General Shepperd talks of understanding the needs and preferences of citizens for National Defense as one of the most important ways in which Reserve Component contributes to National Defense in his interview. The embellishment of placing it in terms of coproduction theory is added by the author.

88. Interview with Ronald Bath, Senior Policy Advisor, Commission on Roles and Missions of the Armed Forces, Gannet Towers, Washington DC: 28 March 1997.

89. Fogleman, Ronald R., Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997.

90. Interview with Stephen M. Duncan, former Assistant Secretary of Defense for Reserve Affairs, Sheraton Suites, Alexandria, VA: 22 April 97.

91. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997. The embellishment of placing it in terms of coproduction theory is added by the author.

92. Interview with Stephen M. Duncan, former Assistant Secretary of Defense for Reserve Affairs, Sheraton Suites, Alexandria, VA: 22 April 97.

93. Ibid.

94. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996.

95. Interview with Stephen M. Duncan, former Assistant Secretary of Defense for Reserve Affairs, Sheraton Suites, Alexandria, VA: 22 April 97.

96. Ibid.

97. John F. Harvey, "Leave on the Lights," Armed Forces Journal International, November 1996, 42.

98. Fogleman, Ronald R., Chief of Staff of the United States Air Force, Luncheon and Presentation by General Fogleman to the Naval War College, Newport RI, 5 May 1997.

99. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

100. The idea of "militia nation" is a central theme for the interviews of General Fogleman, General Shepperd, General McIntosh, General Harvey, and with Stephen Duncan.

101. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996.

102. Robert A. McIntosh, Chief, Air Force Reserve, as stated in AFR Command Review: Air Force Reserve Commander's Review of 1995.

103. Author's experience of working with a Military Liaison Officer with Bulgaria.

104. Interview with Major General Donald W. Shepperd, Director, Air National Guard, The Pentagon, Washington DC: 28 March 1997.

105. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996. As stated in AFR Command Review: Air Force Reserve Commander's Review of 1995. Operation Galileo

is a new program where Reservists help disadvantaged high school students.

106. Reserve Generation supports community drug-free programs for young Americans.

107. Starbase is an educational youth program run by Reservists at Kelly AFB to introduce American youth to science and math.

108. TRANSAM/Walking Shield is the Reserve Program supporting Native Americans with excess NATO and DoD medical supplies.

109. Interview with Major General Robert A. McIntosh, Chief, Air Force Reserve, The Pentagon, Washington DC: 31 December 1996. Reiterated in AFR Command Review: Air Force Reserve Commander's Review of 1995.